Supervisory Management

MARCH 1956

PRODUCTION DOESN'T PLAN ITSELF

Schedules become "disrupted" for a reason: the link between manufacturing and sales is crucial

THE PROGRESS HUNTERS

Management is not all production lines and record keeping—it's laboratories too

TURNOVER: MANAGEMENT'S BLIND SPOT

It's strange, but here's a vital area of cost control that's often overlooked

AMERICAN MANAGEMENT ASSOCIATION

EDITOR TO SUPERVISOR

MANAGEMENT education is the business of the American Management Association. We are often asked, jokingly, if we practice what we preach. Our answer is that we try. Not all our efforts are successful, of course. Like any other business, we have occasional breakdowns in communication, or now and then some important planning that goes haywire.

In our efforts at improvement we learn some valuable lessons. One of these occurred just the other day. The staff of SUPERVISORY MANAGEMENT has been studying its operating procedure. Each person has been asking himself the usual question in work simplification: "How can my job be done better and easier?" We reviewed all of our functions, analyzed the flow of our work, and brought our job descriptions up to date. The results were surprising, as they so often are in a new operation that changes as it grows.

During the process one staff member got a valuable insight. Here's the way he described it afterward: "In recent weeks I've been annoyed sometimes at the interruptions in my work. I'd be in the midst of editing a manuscript, for example, when I'd have to stop to approve an art layout or take a long distance call from an author.

"But as I revised the description of my job and estimated the per cent of time spent on each activity, I suddenly realized that 'interruptions' are the very thing that make my work interesting. They provide a change of pace that keeps me on my toes and enables me to learn more. In fact, my job would be much less stimulating without interruptions."

Many men in mangement have had similar experiences as they backed off to get a fresh perspective on their jobs. A study of the management methods within a group frequently yields unexpected by-products. Perhaps it's the chance of discovering such by-products that helps us keep our minds open.

Hubert Clay

Supervisory Management

VOL. 1 NO. 4 MARCH 1956

HUBERT CLAY
Editor

EDWARD KELLOGG
Assistant Editor

GRACE JACKSON
Copy Editor

ARTICLES

Production Doesn't Plan Itself ... *R. E. McManus* 2

Turnover: Management's Blind Spot ... *Frederick J. Gaudet* 6

Decisiveness—The Mark of a Leader ... *C. H. Jones* 11

Standardization in a Job Shop ... *G. D. Sickert* 14

A Steward Speaks His Mind ... *Mel Siskind* 18

The Progress Hunters ... *Louis P. Shannon* 22

Do Work and Music Mix? ... 32

Ask Them What They Think—Then Listen ... *Harold P. Zelko* 37

Revere Cuts Accident Rate 50% with Safety Test ... 42

How to Live with Wage Incentives ... *W. C. Cooling* 46

How to Get Your Ideas Across ... *Arthur Secord* 55

There's a Better Way to Do It ... 61

FEATURES

Effective Management in Arbitration: Good Records Make Good Cases ... *James Menzies Black* 28

They're Saying in Conferences ... 63

Letters to the Editor ... 65

SUPERVISORY MANAGEMENT is published monthly by the American Management Association, 1515 Broadway, Times Square, New York 36, N. Y. The Association does not necessarily stand sponsor for views expressed by the authors in articles issued in or as its publications. Subscriptions: $6.50 per year (nonmembers $7.50), bulk rates available. Volume 1, No. 4, March 1956. Copyright 1956, American Management Association, Inc.

Production doesn't plan itself

By R. E. McManus

Last minute schedule changes can be annoying to supervisors. But the production planning department usually has a good reason

AN ORDER comes through from production planning calling for an immediate and radical change in the schedule. It's one of those "want it done yesterday" changes that seem to ask the impossible and throws all cost considerations out the window. The supervisor sees to it that the change is made as quickly as possible but can't help wondering whether the production control manager has gone out of his mind.

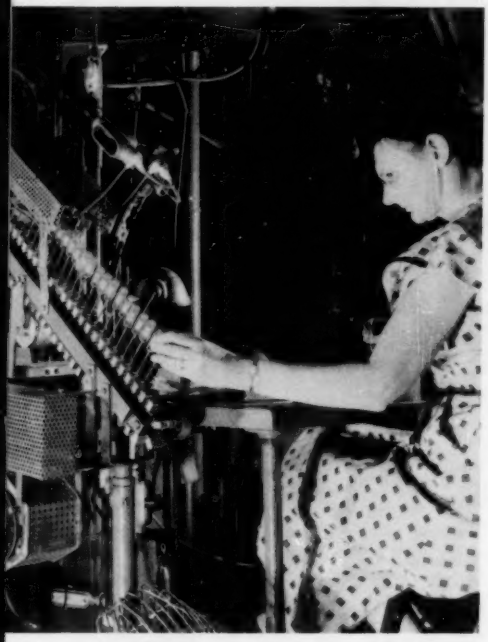
Getting orders for a last-minute schedule change is a fairly common experience for supervisors, and sometimes they're right in thinking that someone in production planning goofed. But in most cases what may seem like a hair-brained schedule change to the supervisor has really been carefully thought out by the planning manager. It's just that there are a lot of factors the supervisor doesn't know about and without this information it's difficult for him to see why the changes were made. That's why it may help a supervisor to have a better understanding of the way a planning manager operates. The next time an order comes through that means tearing the plant apart, it may seem more reasonable.

Here's a typical example showing why schedules sometimes have to be

---

At present, Mr. McManus is carrying out a special assignment as Chairman of the Inventory Committee for the Radio Tube Division of Sylvania Electric Products, Inc., Emporium, Pennsylvania. Prior to his current post, he was a Division Manager and also a Division Supervisor with Sylvania. Before joining Sylvania in 1949, Mr. McManus had considerable experience as a methods engineer, time-study man, and traffic supervisor.

changed and the problems that have to be solved by the production manager. This account is based on a type of schedule change made at the Radio Tube Division of Sylvania,



A "pre-heater" tempers the glass of radio tubes at Sylvania's Radio Tube Division. Newly-designed heater increased speed, eased production problems.

but the principles involved are similar for almost any industry.

On Tuesday customer X phones in. He has run into trouble on his production line and has to make a quick change in product design. He wants to know if we can let him have 30,000 type 6X8 tubes if he has his truck at our shipping dock by about four o'clock that afternoon.

X Company is not a large customer, but it is a valued account which has bought from us regularly over a long period of time. A quick review of the current order board and inventory record shows that there is sufficient stock available to cover this order, but that only 1,500 tubes will be left for future orders.

Sales for this type of tube have been forecast at an average of 6,000 per month for the next four months. If we fill X Company's order we will be out of stock at the end of the following week unless new production can be started before that time.

After a hurried consultation with the production planning department it is agreed that the chances are a little better than even that production on this type of tube can be fitted into the schedule at a fairly early date. The decision is made to accept X Company's order.

This is where the production planning and control department has to make some difficult decisions. Solely from a sales viewpoint, it is apparent that we should produce 2,000 or more tubes for shipment by the end of the following week to take care of our orders and still leave a safety margin. And as the next step, inventory should be built back up as quickly as possible.

From a manufacturing viewpoint, however, this would be tremendously costly because of machine changeover, operator retraining, inefficient labor utilization, and high initial scrap rate. To keep operating

costs down, it would be best not to produce the 6X8 tube until about two months from now and then schedule the production on a long run basis.

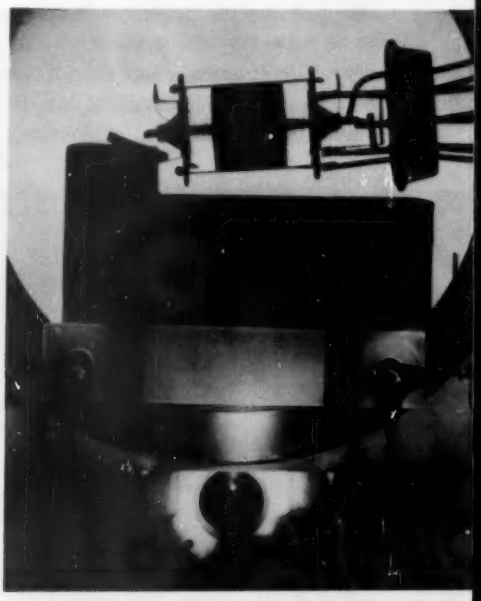
The latter plan would be ideal so far as the manufacturing department is concerned, but from a financial viewpoint it would raise the amount of money tied up in inventory way out of proportion to sales. The perfect solution from a strictly financial point of view would be to produce each month only the number of tubes needed for sales that month.

However, if inventories are restricted to a hand-to-mouth level, customer service will suffer. It would be impossible for the company to take care of rush orders.

What it boils down to is that there is no one solution that will completely satisfy the needs of the manufacturing division, the company's finance department, and customer service needs all at the same time. The planning manager has to find a compromise that will do the best job of meeting the company's over-all requirements.

The first problem that has to be solved is to reduce the length of time inventory of type 6X8 tubes is depleted after X Company's order has been filled. As long as the 6X8 tubes are out of stock, the company runs the risk of losing sales. On the other hand, though inventory must be built up quickly, the cost of starting up production on these tubes must be kept to a minimum.

In the past, 6X8 tubes have been produced at both Plant 2 and Plant



An inspector checks the mount detail of a subminiature tube. The huge enlargement on the screen of a comparator, or contour projector, makes the tiniest details stand out for easier inspection.

4. Plant 2 is currently producing a similar type of tube. Its inventory position in relation to expected sales is sound enough so that production of this type of tube could be cut temporarily in order to squeeze in production of 6X8 tubes. Producing the 6X8 tubes at Plant 2 would offer the added advantage of providing partially trained assembly labor so that the change from one type of tube to the other could be made fairly smoothly. All of the necessary tooling is available at Plant 2, while only part is available at Plant 4.

A review of the material records

shows that most of the parts and materials needed for the 6X8 tube are also used on the similar type of tube now being made at Plant 2. Two additional items that are needed can be obtained immediately from surpluses at Plant 6 and only one additional part has to be ordered directly from the supplier. A quick phone call to the supplier brings a promise of delivery in ten days.

After a discussion with the production control supervisor at Plant 2, it is agreed that the changeover can be made within three days after the arrival of all of the materials. It will take 12 to 13 days from the time production is started on 6X8 tubes until the tubes are ready for shipment. In addition, there is the ten-day wait to get the part from the supplier. This means the company will be out of stock on 6X8 tubes for three weeks – a period of no sales. The potential loss of profits and customer good will during this period make it advisable to try to step up the starting date by getting the parts from the supplier sooner.

The supplier is called again and promises delivery of the part in five days if we pay the overtime and premium transportation cost involved. We agree to this, since the extra cost is considerably less than the money involved in the loss of three weeks' sales. The entire matter is again reviewed with the production control supervisor of Plant 2 and a production changeover is scheduled to start eight days later.

The kind of decisions that had to be made, and the number of problems that came up in making this changeover, are typical of situations where a schedule change is necessary. What may seem like an arbitrary change, without regard for the supervisor or for factory cost, has usually been carefully thought out before it is put into effect.

This example of what happened at one of our plants because of an unexpected rush order shows the many problems the planning manager has to deal with. In every decision he makes he has to worry about finding a solution that will best meet the needs of manufacturing, company finance and customer service.

There is still a great need for improvement in production planning, and nobody knows it better than the production planning manager himself. In the past, and for the most part even today, many of the decisions in production planning are based on experience, judgment, and intuition. But judging from the financial success of most companies, this intuitive form of decision-making hasn't been too far off the beam.

In recent years, however, more scientific approaches have been developed. These will eventually enable the production planning and production control people to eliminate much of the guesswork in their evaluation of intangible cost figures such as the probability and value of lost sales and the value of customer good will. When that time comes, decisions can be made with much greater certainty. ♦

LABOR TURNOVER:

Management's Blind Spot

By Frederick J. Gaudet

It's an area where management could cut costs sharply, but many companies do little about it

SCENE: Brazing department of a small radio parts manufacturing firm.

TIME: Morning, shortly after the start of the shift.

ENTER: Foreman who starts his usual tour of the department. He looks down an aisle and notices that Mary, one of the machine operators, is not working. The foreman doesn't say anything, continues his tour. A worker approaches him with a question about scheduling the day's work. The foreman spends considerable time with him outlining what has to be done. He glances down the aisle again, sees that Mary is still not on the job. The foreman is annoyed. Walks over to Mary.

FOREMAN (sarcastically): I take it you don't feel like working today.

MARY: Frankly, I don't. How about giving me the morning off?

FOREMAN (angrily): You've got your nerve. I have half a mind to fire you!

MARY (voice rising): Well, if that's the way you feel about it, why don't you?

The argument continues, getting more heated. Outcome: Mary was fired. And for a good reason—insubordination.

At the time of this flareup a management consultant was working for the company, and as part of his investigation into the company's labor turnover problem, he decided to study this particular case in detail. The first step was to talk to the foreman.

Careful questioning revealed that the foreman had not asked Mary exactly why she wasn't working. In addition, the foreman admitted that he had always regarded Mary as a good worker and conceded that he might have been a bit hasty in firing her.

From Mary the consultant learned that her training had been hurried. She had been pushed into production brazing before she had learned her job completely. The result was that she could perform the brazing operation about 50 per cent faster on some kinds of parts than she could on others.

On the morning of the argument with her foreman she had received a big shipment of parts that were all the "wrong kind" as far as she was concerned. Since she worked on a piece-rate basis this upset her considerably.

In addition, Mary told the consultant she had received some bad news about her husband's health the night before—it looked as though he might have to quit his job—so she was in a mood to blow her top at the slightest provocation.

Value of investigation

Result of the investigation was that Mary was kept on the job after being given more training to perfect her brazing technique. The foreman and Mary apologized to each other, and both did their best to forget the whole incident.

As the facts showed, Mary was wrong in talking to her supervisor the way she did, but the foreman was almost equally guilty in not finding out why she had been loafing.

Firing Mary could have been an expensive mistake, as the company estimated it would have cost about $3000 to let her go and to find a replacement. Making up this cost would have been such factors as the

---

Dr. Gaudet is Professor of Psychology and Director, Laboratory of Psychological Studies, Stevens Institute of Technology, Hoboken, N. J. He is consultant to many companies in selection and development of management personnel and holds degrees from Harvard, Columbia, and Stevens Institute (Hon.).

time and money invested in her training, her below average production when she first started on the job, the cost of screening and training a replacement, and loss of production while the new worker was learning the job.

This case is fairly typical of what happens in a lot of companies, yet turnover and the high costs connected with it remain one of management's worst blind spots. It's difficult to estimate how much it costs when a worker is fired or quits—the amount varies with the job and with how hard it is to find a replacement.

Cost of replacement

But take the case of a supervisor who quits his job or is fired. Suppose his company decides to replace him by promoting another worker, or—more expensive still—decides to bring in someone from outside. Perhaps at the end of a few months, the company begins to wonder whether it made a mistake in its selection of a replacement, but the new man is kept on for a year or more before it is definitely decided to let him go.

The turnover cost in an instance like this could run between $5000 and $25,000, consisting of expenses such as these: selecting a replacement (which involves meetings with superintendents, the plant manager, etc.), in many cases a medical examination is necessary; training on the job, which, whether it's formal or informal, costs money; lowered production and a higher waste rate while the man is learning the job. And then the man is let go, perhaps with severance pay.

Once again there's the cost of finding another replacement. In addition, the new man will probably find that the department he takes over has poor morale which may be reflected in excessive production costs and high scrap rates. It may take the new supervisor six to nine months to get the department back on its feet again—all in all, a very expensive operation.

Of course, the cost of turnover doesn't run this high as a rule. For the lowest levels of skilled labor, the cost per worker may go down to two or three hundred dollars. But this is the group that has the highest rate of turnover and also makes up the great bulk of employees in any plant or office.

Strangely enough, few supervisors concern themselves with the high cost of labor turnover. This is partly because even companies which do calculate the extent and cost of labor turnover, don't do it by departments. As a result, a supervisor or department head rarely knows what the cost of turnover among his workers amounts to.

Top management position

Lack of knowledge about labor turnover isn't restricted to supervisors, however. As a consultant, I have had first-hand experience with top management's ignorance in this area. In one case, I was hired to do a job for a corporation and devoted most of my time to a study of one

particular plant as a means of getting the "feel" of the whole organization.

One of the first things I did to get a picture of personnel and supervisory practices was to examine labor turnover in the plant. After my study, I reported to the officers of the corporation that the cost of labor turnover in this one plant, which had about 10,000 employees, was nearly two-and-half million dollars a year. Most of the corporation officers were amazed. One of the vice-presidents declared: "You're crazy. Our profits in that plant are much less than that." What this had to do with my findings, I still don't know. The only connection would be that if the company had reduced labor turnover costs by a million dollars, its profit picture would have been considerably better.

What impressed me most about this meeting was that neither the president nor any of the other officers even tried to point out the lack of logic in the vice-president's statement. Nor did any of them challenge the facts I had presented. The whole problem was just too remote for them to think about intelligently. Later, one of the officers did come to me to examine my figures and concluded that my estimate was low – as it really was.

It seems safe to assume that turnover is one of the areas where a firm can make its biggest savings in production costs. Although there are many factors that affect labor turnover, one of the most important is good supervision. This is particularly important in dealing with new employees because labor turnover is highest during the first 10 or 12 weeks of employment.

For example, take the case of

"I don't care if you did design and build him! He's not getting paid to do your work, you are."

Mike, a pump maintenance man: A few years ago, Mike very reluctantly agreed to move back to his wife's home town. He was fortunate in finding a job in his own trade within a few days. The foreman he talked to was friendly during the job interview, but when Mike reported for work, the foreman was tied up and had one of his assistants take over.

Being very busy himself, the assistant put Mike to work and then left him. In the middle of the morning Mike had to get a spare part. He found out where they were kept and on the way to get the part he passed the foreman. The foreman was talking to someone and didn't see Mike. But Mike figured he was being given the cold shoulder, brooded about it, and before the morning was over decided that this was no place to work. He wasn't even sure he was going to finish out the day.

Shortly before noon, the foreman came by and although he was still pressed for time he did stop to find out whether Mike knew the area well enough to find a good place to eat. Mike said he didn't, so the foreman introduced him to another worker and the two of them went to lunch together.

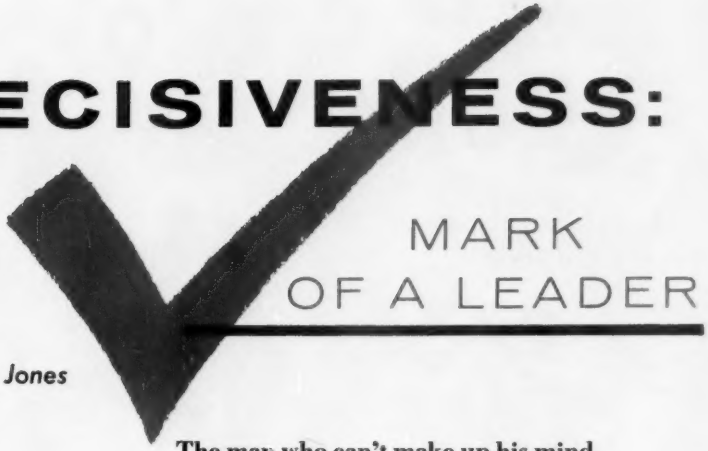
During the meal, Mike talked a little about his doubts—he didn't say he was going to quit — but he said enough to show his disappointment with the company and with the foreman. The other man assured Mike that the foreman was really a nice guy and that Mike would take a different view of the company after he'd been there a while.

As a result of the lunch-time conversation, Mike decided to try the job out for a couple of days more. That was several years ago. Mike is now one of the company's most loyal employees, but the company almost lost him because the foreman didn't figure it was worth the effort to push his work aside to make sure a new employee got off to a good start.

This is just another example of many that could be used to show the important effect supervision has on turnover. So far, most of the stress has been on the cost of turnover, but of course, so far as the supervisor is concerned, cost isn't the only factor. A low turnover rate can be a big help to a supervisor because it makes his job easier. With a low rate of turnover, the supervisor isn't continually faced with the problem of breaking in new employees—he'll have more time for planning, scheduling, seeing that things get done. ◆

I would be the last to deny that a business would be a shambles and probably fail if people did not obey and carry through once a decision had been made by higher authority. But if an atmosphere is created where no one dares be a non-conformist or where people are not encouraged—not merely allowed, but really encouraged—to state their viewpoint, I think we cease to manage; we then become professionals carrying out a competent and uninspired operation. —William G. Caples, at AMA Manufacturing Conference

DECISIVENESS: MARK OF A LEADER



By C. H. Jones

The man who can't make up his mind is hard to work for and hard to work with. Here's a four-point plan for overcoming indecision

RANKED near the top on the "worst kind of boss" list is the one who can't make up his mind—he always has to have other people tell him what to do. It's all right to seek advice or check the thinking of others, but after the facts are in, it's up to the "boss," whether he's a supervisor or a corporation president, to make the decision.

But the fact remains that there are a lot of people who just can't make up their minds. For them, every minor situation become a major problem:

Should they wear this tie or that; should they accept a late dinner invitation or not; should they go away on their vacation or stay home; should they give in to their child or stand firm; should they keep their job or look for a new one? These and hundreds of other similar questions which most of us take in stride may become a nerve-racking ordeal for the person who can't decide.

Every time he is faced with a choice of action, the indecisive person becomes panicky and unconsciously tries to find ways to avoid having to come to a decision.

As a result, this kind of person becomes timid—seems to be drained of energy, drive and enthusiasm. He is ideally equipped to become a failure in life for, as Shakespeare said, "Heaven never helps the man who will not act."

Although people like this may seem to be exceptions, indecisiveness

is far more common than is realized. The reason it isn't so apparent is that people unconsciously use tricks to cover up their general state of indecision—so says Dr. Karen Horney, noted psychiatrist.

She points out that as part of their cover-up, "they procrastinate; they just don't get around to doing things; they allow themselves to be swayed by chance, or else leave the decision to someone else. They may also becloud issues to a degree that leaves no basis upon which to make a decision."

But, while the aimlessness that results from this kind of conduct is not usually recognized by the person himself (because he justifies it to himself and covers it up), it is more readily recognized by others. He is soon labeled as a person who doesn't know his own mind.

There are, of course, many occasions when a problem or course of action can only be decided after a great deal of time and thought. In such cases, a snap decision is often worse than no decision. But in most everyday matters, a few seconds' or few minutes' thought and reflection are usually enough for a person to reach a conclusion.

The reason many people are indecisive is fear – fear of having to assume responsibility for the choices they make. Perhaps as children they were not given enough independence in making their own decisions—not allowed to stand on their own two feet. Instead, they were encouraged to look to their parents for the final word on everything.

Fear of decision

The carry-over into adulthood of this complete state of dependency can be tragic, since every step a person takes requires some kind of decision, major or minor. Unless a person is able to make up his mind, without undue anxiety and fear, it is impossible for him to achieve any real peace of mind, happiness or success.

Here are a few suggestions that will help overcome the common fears that enter into making a decision:

1. You're bound to make a wrong decision occasionally. So what? As the British statesman Gladstone remarked, "No man ever became great or good except through many and great mistakes." Therefore, forget your mistakes, but never what they teach you. They're your best instructor.

2. Whenever you find yourself hesitating unduly in arriving at a decision, ask yourself, "How important to me or other people is this matter, anyway?". Take as objective

---

Mr. Jones is an Editor for the Stevens-Davis Co. of Chicago where he has been on the staff for eight years. He has been Editor of "Human Relations at Home, at Work, at Play" and on the staff of the training publication. After receiving his A.B. and M.A. from Harvard, Mr. Jones was a reporter and Assistant Education Editor for the Chicago Daily News.

and impersonal a point of view as possible. If the matter is really an important one, take time to think it over and consult others if you think they can help. But if the problem is a minor one, make a snap decision and then forget it. Any reasonable action is better than none.

3. If you're inclined to worry and stew over your decisions afterwards, remember that the tension you feel will disappear with time. Comfort yourself with the thought that you have added to your stature mentally and emotionally by taking action yourself instead of ducking the issue by procrastinating or passing the buck.

4. Remember that others will judge you (and you, therefore, should judge yourself) by the long-range, over-all accuracy of your decisions, not by each isolated instance. While patience, tolerance and understanding may be the key to getting along with others who just can't make up their minds, it is not the key to getting along with yourself, particularly if you happen to be indecisive yourself.

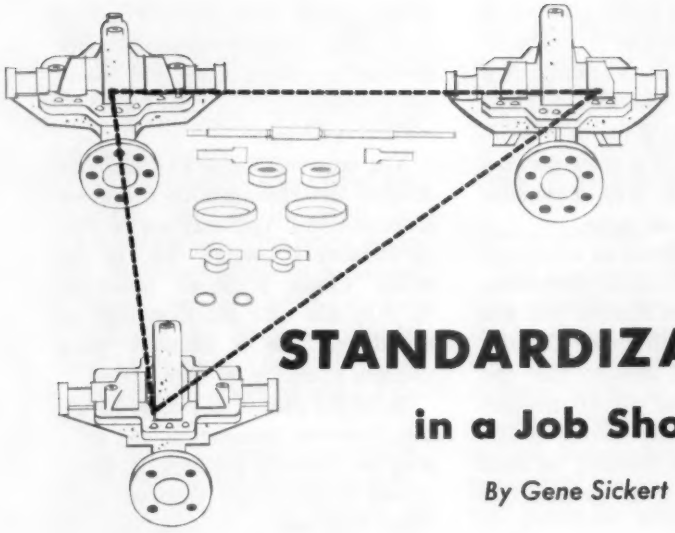
The only intelligent attitude is to develop determination to overcome indecisiveness. You may not be able to conquer it entirely for, as the writer Elbert Hubbard observed, "it does not take much strength to do things, but it requires great strength to decide on what to do."

As in the case of any other handicap, however, persistence can go a long way toward lessening it. Don't expect to transform yourself overnight. But time is on your side. By putting forth constant and continued effort, and by following these four simple rules for making decisions, you can go a long way toward gaining a reputation for being able to make up your mind when and as you should. ◆

Saving Man-Hours

The "indirect labor" category includes handlers, porters, sweepers, and so on. Studying methods in this area, we found that we were still scraping floors with hand scrapers, still using hand brushes on our aisles and our shipping platforms. And—contrary to the findings of previous studies—we discovered that there were machines available which would remove wax from cement floors and that we could do a satisfactory job with mechanical sweepers. The introduction of this equipment saved us many man-hours. Further, we reviewed our conveyor system, studying each plant, and altered out conveyors to save manual handling. We also studied methods of handling from the production centers to the warehouses, finding that at our one-story plants it was more economical to handle pallet loads by mechanized truck than by conveyors. We finally adopted truck trains which handled five pallets on a load and this decreased the labor involved proportionately. These and many other moves all proved to be man-hour savers.

—Joseph W. Kuebler, in AMA's *Special Report* No. 4



STANDARDIZATION in a Job Shop

By Gene Sickert

Here's how a pump manufacturer streamlined its operations and cut production costs by using standardized parts—even though much of its work means filling specialized, custom orders

EVERY schoolboy learns about Eli Whitney and his cotton gin, but relatively few hear about his greater contribution—the concept of standardized, interchangeable parts. Originally worked out by Whitney in 1799 to speed production of muskets urgently needed by a young America, standardization today has developed into one of industry's most valuable weapons in fighting costs and boosting output.

While standardization is not new in industry, it's not very old either. Books have been written on the subject, but there are still no set rules for standardization. To a considerable degree it has been forced on industry, but once installed, it has proven so valuable that alert management is actively seeking new ways to use it.

Standardization is usually regarded as the private property of the high volume, mass production industries like automobiles and household appliances. But recently, standardization has been bringing substantial rewards, particularly in the area of cost reduction, to small industries.

Our own experience with standardization at Peerless Pump is an example. Though Peerless could be classified as a major pump manufacturer, nevertheless, we are really a job shop in the sense that much of our work involves filling specialized orders.

Push standardization

Our first attempt at using standardization on a major scale was made several years ago when we acquired another firm making products similar to our own but of a different type. Engineering nomenclature, bills of material and order processing procedures of the other company all differed from the ones we were using.

At first this meant duplicate engineering processing, inventory control, scheduling sections, etc. The same conditions prevailed in the shop, where duplicate stock rooms and assembly departments were necessary. Obviously a smooth transition to a standard system was needed.

The first step—and it had to be made gradually—was to standardize engineering nomenclature and related forms. The term engineering nomenclature means a uniform terminology for the identification of parts. It meant the adoption of standard descriptions which were established by national standards or industry practice, and then identifying them with our own organization by a uniform part numbering system. After the basic part was defined and identified it became so identified on all related forms such as drawings, bills of material, purchase orders, shop routings, etc.

Standardization was also extended to cover specifications for materials, processing and inspection. Once set up, the standards have become the bible of our design engineers. If the standard specifications aren't followed faithfully, there are loud complaints from other departments—from Purchasing about the added cost of special materials, from Production because of the addition of an unusual inventory item, and from Methods if special tooling is required.

This does not mean that nonstandard parts cannot be specified, but use of standardized specifications does provide excellent control over such items, and spells out the fact that any item required that is not standard means added cost.

In standardizing our operations we found, however, that it was uneconomical to apply the new part-number system to all manufactured parts, since we knew that many of them would be made obsolete by redesign in a relatively short time. For example, an impeller made specifically for one of the company's older pumps was identified on all old draw-

---

Since 1950, Mr. Sickert has been Works Manager for the Peerless Pump Division of Food Machinery and Chemical Corporation. He previously held the same position with the company's Bolens Products Division. Prior to joining Bolens, he was with the Perfex Corporation. Mr. Sickert is a graduate engineer from the University of Wisconsin.

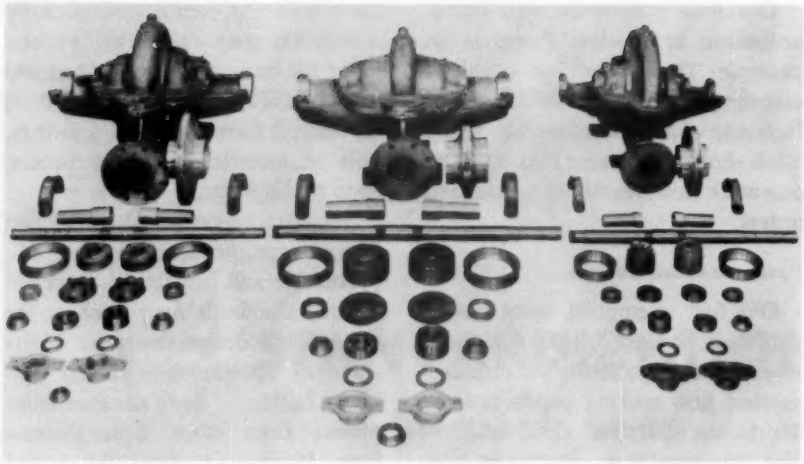
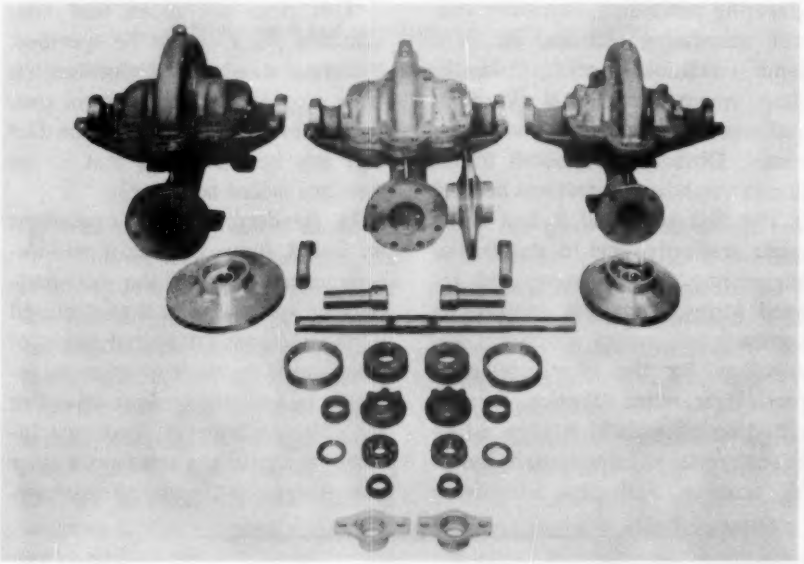


Photo above shows three pumps before standardization redesigning was undertaken by Peerless Pump. Pump components are arranged under each pump. They total 68 different parts to be manufactured for the production of the three pumps.



Above: After Peerless got under way with standardization, the pumps were redesigned. The resulting pumps, of comparable performance to the three in top photo, have 21 interchangeable components, a graphic example of the economies.

ings, bills of material, inventory cards, shop records, etc., as V-850-B. Since the pump on which it is used was to be replaced by a newer model, it would have been a waste of time and money to change all the records to conform to the new system.

The standards now in use have also made it possible for Peerless to standardize inventory and scheduling procedures. At one time, lack of standards forced the company to maintain individual inventories for each product. Inventory clerks had five or six material specifications for the same part; it was not unusual to find the same part specified as red brass, navy bronze or by alloy trademarks adopted by certain mills or foundries. The bill of material had to be carefully analyzed to identify the items.

Aid personnel problems

With the existing shortage of trained personnel we have found that standardization, in all of its phases, minimizes the experience necessary and reduces the amount of training that is needed. The purchasing department welcomes standardization for it eliminates vague specifications. This speeds up identification with vendors, reduces the possibility of error, and by virtue of greater interchangeability leads to quantity purchases.

The manufacturing departments have also derived real benefits from standardization as illustrated by the photos on opposite page. It can be seen that interchangeability has reduced the number of different parts to be manufactured. Standardization permits us to take longer production runs on common parts which in turn reduces setup time, results in improved tooling, suggests new methods, and reduces manufacturing cost.

Logically, these apparent economies have caused our methods department to review all parts for the purpose of establishing standard routings. The parts are routed over the machines which will give us the lowest manufacturing cost. During this method analysis, improved tooling methods are conceived and we are able to utilize, to some extent, the latest production machine tools such as chuckers, broaches, multi-spindle drill presses, etc.

Savings are also achieved through lower indirect labor costs. Since a part can seldom be completed on a single machine, the material must be moved from one machine to another. Often a group of standard parts can be moved as economically as one special part. Hence, standards can reduce material handling costs.

Standardization is not a cure for all production problems, but segments of a product line can be isolated for standardization, and where intelligently applied, some of its advantages will be reflected in other products. It's not easy to put into effect; it takes time, and it's expensive. Once established, however, standardization eliminates confusion, improves morale, reduces nonproductive repetitive tasks, and achieves very real manufacturing economies. ◆

A STEWARD SPEAKS HIS MIND

By Mel Siskind

A union steward tells all about the things some supervisors do that cause a union to make a bitter grievance case out of what is really a mild disagreement

SHOP stewards, as a group, aren't the easiest people on earth to work with. I know. I used to be one. But I've seen supervisors who were equally difficult and who, many times, did not know it!

A candid steward will admit that a good bit of wasted time in grievance handling or day-by-day problems can be traced to expediency, union politics, or just plain hardheadedness. But there are supervisors who have standing attitudes toward grievance handling which do just as much to stymie progress. The supervisor, who, by certain attitudes, forces too many grievances up the line for decision undoubtedly adds considerably to his plant's operating costs. Moreover, he never achieves the kind of labor harmony necessary for an effective working unit.

This isn't one man's opinion. I talked to other stewards, and to stewards from many companies, and found similar complaints nearly everywhere. From the viewpoint of these stewards, there are three main types of ineffective supervision:

1. The "Mind-Made-Up-In-Advance" type of foreman often blows up a grievance of moderate proportions into a "life-or-death" struggle because he has his mind made up in advance that: "I don't like the employee involved" or "I don't like this steward" or—more deadly—"Is he trying to tell me how to run my department?"

Hand-in-hand with this type is the foreman who makes up his mind in advance about the outcome of a grievance before the whole story is laid before him. In one instance, this mind-made-up-in-advance attitude backfired and the foreman was caught in the middle.

It happened like this:

Bob was a paint sprayer in the parts department of a machinery manufacturer. He normally stopped spraying at 3:30 in the afternoon in order to get his equipment cleaned before 4 o'clock when the shift ended. One afternoon, a design engineer rushed in with a new jig just before 3:30 and asked Bob to spray it. Bob agreed, and sprayed the jig. Afterward, he cleaned his equipment and punched out at 4:25. His next paycheck did not include this overtime as he had expected, and he took the matter to his steward. In the discussion with the foreman, the steward started to tell the story, but the foreman broke in. "What time did Bob start his last job?"

"About 3:30," the steward answered, "but . . ."

"No 'buts' about it," stormed the foreman. "He knows we quit at 3:30 for clean-up. I'm not going to have guys staying late just to pick up pocket money!" The foreman went stalking off.

Result: a full-fledged grievance, with the new overtones of anger and frustration added to the original mild, orderly grievance.

The grievance was reviewed by the department head, who was told the whole story, and then heard that the steward was not permitted to tell all of it by the foreman. The department head had to rule against his own foreman, despite the excuse that the engineer had forgotten to check with the foreman in advance, and thus was partly to blame. It was the foreman's premature decision which had wasted a lot of time and embarrassed him with the department head.

2. The "I'd-Like-To-Back-Down-But-I-Can't" type of supervisor often refuses to change an indefensible decision either because he's afraid he will lose face or because he simply cannot back down gracefully.

There are many ways of "saving face," depending on the circumstances involved, but the best way

---

Now with the Quality Control Section, Marine Division, Sperry Gyroscope Company Division of Sperry Rand, Roosevelt Field, Long Island, Mr. Siskind was a shop steward for several years. As a former magazine editor, radio news editor and newspaperman, he has reported many labor and management news developments.

I've found works like this: State simply and with dignity that you would like to reconsider your position.

That may sound bleak and uninviting, but I know from experience that the shop steward will appreciate what you're trying to do, and surprisingly, will often help you do it. By making a frank statement you have disarmed the steward and enlisted his sympathetic understanding. It is as if you had said: "Let me keep my dignity and we can come out of this with a more honorable and equitable decision." A strong point in obtaining the steward's willingness to help you is the fact that he may need the same sort of consideration from you some day!

One thing is sure: A forthright statement of the desire to back down from a stand once taken will not hurt you as much as covering up the real meaning of the change, or disguising it as a gift. I've heard supervisors who talk like any change on their part is a favor they have decided to grant against their better judgment. Most stewards know that the supervisor changed his mind because he couldn't make his decision stick, and that any attempt to "do it for the men" is pure bluff.

Most stewards and supervisors have found that it's a good rule in labor relations dealings not to lock all the doors behind them. Too often, one of these doors would provide the best way out of a difficulty. The term used on many shop floors, "Leave the back door open!", had its roots in such situations.

3. The "I-Can't-Make-Up-My-Mind" type of supervisor gets into difficulty in three ways: A) by being afraid to "stick his neck out," B) by not knowing the extent of his authority, or C) by making a poor evaluation of the situation.

Being afraid to go out on a limb is nothing new. It is almost the hallmark of a poor supervisor. If a decision is within the powers delegated to the supervisor however, he has no real choice in the matter! He must make the decision, and not let it hang fire, or pass it along to higher authority. Bluntly, a supervisor is not paid to "pass the buck."

Not too many months ago, an employee in the assembly department of a rather large organization was called to the phone. It was a call from his wife and she had told the company operator it was an emergency.

When the employee picked up the phone, his wife sounded hysterical. She told him that he had to come home as soon as possible—but she was so excited he couldn't make out much else. His wife had been under a doctor's care for diabetes and she had children at home to look after.

As soon as he reassured her he would start home at once, the employee asked his foreman for permission to leave his bench. Even though the shop had a long established procedure which allows a foreman to let an employee leave work in an emergency, the foreman

said he'd have to consult a higher authority. The employee had a transportation problem in getting home and the foreman, by his indecision, made that part of the situation worse. The foreman's own supervisor, after hearing the story, said he'd "have to check on it."

It took almost an hour for the employee to get permission to go home, but it will take months before that employee feels right about the company's interest in him, for as far as he is concerned, the foremen represent the company. Moreover, other men in the department heard the story and spread it, creating an undercurrent of hostility.

Stewards and union representatives are making a deeper analysis of supervision these days—honestly trying, in most cases, to be constructive. The complaints I've mentioned represent a fairly general view from the union position.

It has taken a generation to get from the labor philosophy of conflict to the point where labor is beginning to consider cooperation as a viewpoint; supervisors can help, each at his own level, by remembering:

1. Don't be obstinate for obstinacy's sake.

2. Don't refuse to back down for fear of losing face.

3. Know your authority and exercise it quietly and firmly. ◆

"I don't know whether he's in a good mood or not, I can't see him now."

THE PROGRESS HUNTERS

By Louis P. Shannon

Industry spends millions of dollars each year on research, but the average person has little idea of its effect on all of us. This is the story of the part du Pont's research teams have played in creating better living and more jobs

IN FUNDAMENTAL research, where brand-new knowledge is discovered, research scientists usually are not hunting for any particular thing, they are just exploring. They go to the very frontier of knowledge, then seek to advance that frontier. And since it is a wilderness that they are entering—a scientific wilderness—there is no way of knowing in advance what they are going to find, or what it will be worth if they find it.

The average person knows little about how a research scientist works and what comes out of pure research. Perhaps he casually reads a paper some evening and finds, back on page 3, a little paragraph saying that some corporation has announced a new development. It doesn't take very long to read it, and it makes no particular impression. The reader has almost no conception of the great struggle that has gone on to bring the development

about, but frequently it takes years in time and millions in dollars to bring about some of these discoveries.

The things that come to us from fundamental research are about as far removed from being consumer products as the babies born today in your nearest hospital are from being jet pilots. The infant in either case, whether it's a scientific discovery or a baby, is going to require a tremendous amount of attention and a large investment in both time and money to develop to its full potential.

When something is discovered out on the frontiers of knowledge, there is always a question of whether it will be useful or whether it's just a scientific curiosity to be filed away along with other fabulously expensive discoveries.

These new discoveries, whether they are a white powder, a green liquid, an amber crystal, or something else, have to be projected into a thousand unsolved problems to see whether or not they help in the solution of any of the world's problems. Suppose there is reason to believe that the new material will be of some value, that it may be useful in a given situation here, or it may be worth something there. Now the researcher has a couple of clues as to where there is a potential market. Is he out of the woods? No, he's deeper than ever.

The researcher doesn't have any of the new material, and he doesn't really know how to produce it either. To be sure, he has made a pound or two of it at a tremendously high cost. It was produced by Doctors of Philosophy who stirred it up in a glass. But that method would be too expensive for commercial use. The problem now becomes one of developing an industrial process and designing a commercial plant to mass-produce the new product.

I could give a great many cost figures to show why things have to be on a big scale and mass-produced before the average person can buy them. The first penicillin was made in a small quantity in a laboratory and was prohibitively expensive. Likewise, the early streptomycin and aureomycin were fabulously expensive. Until production is scaled up and a product is mass-produced, the price can't be brought down to where the average person can benefit from it.

Much has been said about the economies of mass production, but let me mention a rather startling example. You could make cellophane at your kitchen sink! But you'd get a very inferior quality at

---

Mr. Shannon, Manager of the du Pont Company's Extension Division, is a well-known speaker on industrial progress and chemical developments. He began with du Pont in 1942 in personnel training and industrial engineering work. Prior to that time, he was engaged in educational work as a teacher and school administrator.

"Mylar" is checked as it comes off production line. DuPont is currently spending $60,000,000 a year for research which may lead to more products like "Mylar."

the monumental cost of $50 a pound.

Cellophane mass-produced in modern industry is perfect and uniform in quality, but costs only about 50 cents a pound. The catch, of course, is that to reduce the cost to one one-thousandth of what it was when produced in small batches, about $20,000,000 had to be invested to provide a modern plant.

Ten years from Pound No. 1

How long does it take from the time a research scientist makes a discovery at the frontier of knowledge until it can be brought on through and Pound No. 1 of the product is being produced on an industrial scale? Some recent calculations determined that, on the average, it takes between 10 and 11 years to bring a new discovery through from the beginning of the idea until Pound No. 1 is being made commercially.

Nylon almost hit the average on the nose. It came from the research work of the very brilliant Dr. Wallace H. Carothers and his associates. They were trying to find out how man could duplicate nature and hook molecules together as you

might make a chain of paper clips. Nature has done this from the beginning of time in the growth of grasses, in plants like cotton, in natural rubber, in silk. Man hadn't the slightest idea how to do it, and that was the problem that intrigued Dr. Carothers. After about 11 years and a risk of $27,000,000, it led to nylon.

Bail out on Nylon

The timing of nylon seems almost providential. It arrived shortly before World War II. Before nylon, silk was the only material known that was both light enough and strong enough for parachutes. During the war, however, many American boys bailed out of disabled aircraft and floated safely down to earth on nylon parachutes.

Final inspection of "Dacron" yarn. After checking, yarn cake is cellophane wrapped.

We have about 2,600 research scientists at du Pont, about half of whom have earned the degree of Doctor of Philosophy. How much does it cost to have a research scientist work for you? We find that each one costs us about $25,000 a year. That's not his salary alone, but research scientists don't work alone. With any group of research scientists, there must inevitably be some pipefitters, machinists, welders, millwrights, coppersmiths, electricians, instrument design men, glass blowers, carpenters, and many others who help translate dreams into realities.

In addition to the $25,000 a year cost per man, we have about $33,000 invested in the equipment he uses. Today's scientists are not happy with only the Bunsen burner, the set of tongs, and the test tubes found in the average high-school chemistry course. They seem to need an ultraviolet spectrophotometer, an electron microscope, a molecular still, and many other complex and expensive things. The question is, then, are the things that come out of this $25,000 per year man and his $33,000 pieces of equipment worthwhile? Are they justifiable?

Nylon arrived just before the war, but only slightly less spectacular was the arrival of neoprene and other types of synthetic rubber. When Poland was invaded by Hitler, we

"Mylar" polyester film is wound on large mill rolls, and then carried to the storage areas on overhead conveyers.

had a capacity in this country to make only a few thousand pounds of synthetic rubber a day. Not too long after that Singapore fell to the Japanese, and we were cut off from the supply of natural rubber.

There was a tremendous need for and a critical shortage of rubber. But again, the technical know-how existed to make synthetic rubber, in spite of the great effort required to take this little bit of know-how and multiply it to get major producing plants. But it provided just one of the proofs that it is in the national interest that research money be risked and the technology be developed.

We are currently spending, in du Pont, more than $60,000,000 a year on research, looking for new knowledge and for new and better things for America. We have found that every dollar we spend on research leads to new knowledge which results in our spending three dollars on production facilities. That means not only new products, but new jobs for people! In our business, it takes an investment of $24,000 to create one job.

Looks like waste

In its basic state, Dacron looks like a handful of cotton waste. Not very impressive. Yet we risked $80,000,000 to get that same Dacron polyester staple into commercial production. Why? Well, some of the advertising people have called Dacron man-made wool.

The United States is about 50 per cent dependent on foreign sources for wool; about half the nation's wool requirement has to be imported. When an international crisis comes along, the price of wool skyrockets itself right out of the reach

of many people. A product such as Dacron makes us independent of foreign sources and means Americans don't have to do without in time of international crisis. Man-made fibers afford a stable supply at a stable price.

Actually, the customer decides whether Dacron, or any other new product of research, will be successful or not. The customer walks in and looks at a suit of clothes, a pair of slacks, or a shirt, and he examines the quality and style. He asks the price, and then makes his decision to buy or not to buy. If enough people buy enough Dacron, it's a success. If too many people say, "No, thank you," the story has a sad ending. The customer probably doesn't know and certainly doesn't care that du Pont has risked $80,000,000.

The new Mylar

Mylar is about the same thing chemically as Dacron, but instead of looking like cotton waste, it's a thin transparent sheet. It's made by taking the same liquid used for Dacron, and instead of extruding it or squirting it out through a spinnerette, it is cast in a process much like making cellophane.

The resulting product is a thin, transparent sheet. Not very spectacular to look at, but it has a tensile strength of 23,600 pounds per square inch! A strong man can't pull apart a sheet that's only 1/500 of an inch thick; he can't tear it at the edge and he can't push a blunt rod through it.

Besides its tremendous strength, Mylar is also an almost absolute moisture barrier, and its ability to resist the passage of electric current is fantastic. Take a sheet only 1/1,000 of an inch thick. Put two terminals up against it and throw the voltage into that circuit: 1,000 volts; 2,000 volts; 3,000 volts; 4,000 volts—almost 5,000 volts before it can break through 1/1,000th of an inch of Mylar!

Just one example of an application of Mylar, using its dielectric strength, were two electric motors. Both were half-horsepower motors, but the one "before Mylar" weighed 45 pounds, while the "after Mylar" motor weighed only 27 pounds, and was also quite a bit smaller. This weight and size difference is not too important for washing machines that sit on the basement floor, but in a bomber, the difference is vitally important. A big bomber requires literally hundreds of electric motors. In such critical applications, weight and size economies such as reducing the motor weight from 45 to 27 pounds become vital.

These have been just a few examples of the part research plays in one company in increasing the country's technical know-how, providing new and better products for living, and providing new jobs. Research is tremendously expensive, but the results in better living and more jobs make it more than worth it. Today's sowing determines tomorrow's harvest. Progress must be hunted. It doesn't "just happen." ♦

effective management in arbitration

Good Records Win Cases

*By James Menzies Black**

Putting it in black and white can go a long way toward keeping you out of the arbitration red

A DIRECTOR of industrial relations for one of the large steel companies was talking about grievance handling. "At our company," he said, "we have to be very careful. Our foremen must be well trained. We think of every grievance as a possible arbitration case. And we know that what the foreman says or does at the first step of the procedure is evidence if the argument gets taken to an arbitrator. We can't afford to make mistakes. Neither can our supervisors. We need records to document our acts."

Sounds pretty formal and legal, doesn't it? But from the big-company point of view, it's strictly realistic.

Most large manufacturers deal with their employees through unions. Nearly every labor contract has provisions that set up the machinery for grievance handling. In nine cases out of ten, the terminal point of the grievance procedure is arbitration. And the arbitrator's decision is final and binding on both sides.

That's why a plant with many employees can't take arbitration lightly. Management knows from experience that the union won't hesitate for financial reasons or anything else, about taking a dispute to an outsider—especially if it thinks it has a good chance of winning. There are plenty of dues-payers in the bargaining unit. The arbitrator's fee,

*Manager, Personnel Division, American Management Association

of which the union generally pays half, is no obstacle. In fact, there may be a lawyer on labor's payroll whose full-time job it is to help the business agent and the shop stewards present grievance cases. There may even be a permanent arbitrator, paid by both sides, to hear the disputes.

At smaller companies, formal arbitration hearings are, comparatively speaking, rare. They have the standard grievance procedure written in their union agreements, and more likely than not, a section that states that if the company and the union can't work things out between themselves, an arbitrator will be called in. But an arbitrator costs money. And neither the company nor the union is anxious to spend dollars in this way.

Size of firm is unimportant

But regardless of size, the company with a keen sense of labor relations realities keeps adequate records. It is deeply conscious of the fact that unless it has accurate information on personnel administration, it may find itself in a difficult position in the event of an unfair labor practice charge, an arbitration case, a wage and hours hearing. More than that, it makes certain that its supervisors are aware of the value of records. For records are day-to-day proof that management has acted consistently within company policy. They are extremely important. Management requires this kind of data to run a sound personnel program. Management must have facts in an emergency situation.

What do you need for the record? Who should keep the records? The answers to these two questions vary from plant to plant. But almost always there is a master file of pertinent facts on personnel maintained by the industrial relations department. Where the system breaks down most frequently is in the management-foreman relationship. The supervisor takes individual action without regard for precedent, or without bothering to check the record. Very likely he has kept only sketchy records himself. Perhaps he has not even bothered to tell personnel of significant actions that he has taken. Actually, a report of these actions should be in the master file.

Here's a case. Foreman Jones fires employee Smith for insubordination and incompetency. Smith lickety-splits to the shop steward. The grievance machinery is turned on, and the argument finally gets to an arbitrator.

"Have you ever warned Smith that he was not measuring up?" asks the arbitrator.

"Plenty of times," says the foreman.

"Any record of it?"

"No. They were oral warnings."

"Any witnesses?"

"No. I didn't want to embarrass Smith. I always warned him in private."

Then the arbitrator says, "How long has Smith been with you?"

"About eight years," is the reply.

"Have you any individual production records to show he was a poor

worker?", asks the arbitrator.

"Well, no. We don't keep records individually. We keep production records by departments."

"I see that Smith has had three merit raises since he has been here, plus a number of general increases. How do you explain those?"

We'll leave Foreman Jones to work his way out of that one. And we admit that his is an extreme case. But don't think it hasn't happened. Worst of all, it will happen again.

Basic personnel records

Yes, management needs personnel records. And the foreman must be conscious of their value. He should have access to them. For they guide him to intelligent decisions.

What kind of records? Here is a list that will at least provide you with the basic requirements. That is, if you keep these records up-to-date and accurate.

The maintenance of proper personnel records is essential. The forms need not be complicated. But smart management and smart supervision make certain they have a running account of each employee's job history. The following forms are fundamental:

The application form: This is kept by the personnel department. It should include information on the job candidate's education, job experience, references, and vital statistics. The application file can be used as sort of a personnel inventory. The foreman may find it helpful in deciding such questions as transfers, promotions, and the like. The application blank need not be simply a hiring form—filed and forgotten.

The employee job record: This should provide information on the employee's attendance record, punctuality, instances when discipline was required together with reasons. It should list worker's grievances and their settlements, his transfers, promotions, demotions, merit increases and wage history. Also facts on his special skills or abilities should be set down. Data of this kind are extremely useful to the conscientious foreman. They supply him with solid facts in deciding questions. Naturally this file is kept in personnel. But much of the material that is fed into it comes from the supervisor. If he doesn't do his best to keep the record current, it's useless, or almost so.

The grievance form: Whether your plant is organized or not, you should keep a record of employee complaints and their adjustments. These should be entered immediately on the job record. It's smart to maintain a written record of this kind. It may come in handy at a hearing before the National Labor Relations Board or some state or federal agency. Only the foreman can furnish personnel with first facts on grievances. If he's well trained, he's record conscious.

Physical examinations: Each job applicant should be required to take a physical. A statement on the condition of his health should be entered on his employment record,

disabilities carefully noted. This is the responsibility of personnel. Failure to insist on pre-employment physicals can lead to expensive payments on Workmen's Compensation. You may pick up a bill for an employee's long-standing disability because you didn't keep adequate health records. The foreman needs information of this kind in deciding whether or not an employee can be safely placed on certain jobs.

Production records: The production record is the foreman's baby, for he's the only one who has daily contact with the worker. Quality and quantity of work should be noted, together with general efficiency and attitude. These facts put you in a solid position if you must justify a down-grading, a promotion, or a termination to an arbitrator, to NLRB, to the union, or to management itself. Production records, if possible, should be kept both on an individual and group basis.

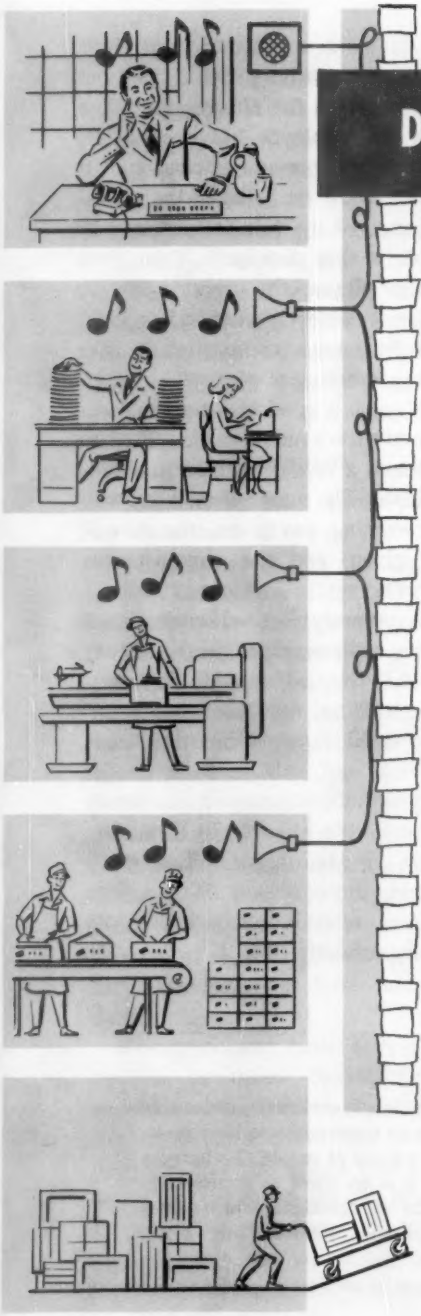
Warning forms: Official warning forms may not be necessary. But it's a good idea for a foreman who has warned a worker about a certain offense to give him written notice if he repeats the act three times. The warning should spell out the nature of the offense, and state that the employee has been orally warned on previous occasions. It should warn the worker that a recurrence of the rule infraction may result in his dismissal. This gives the employee the opportunity to understand clearly what he has done, and documents management's case in any subsequent hearing.

It's also a good idea for the foreman to write a memo to himself when he issues a verbal warning to a subordinate. The memo should say why the warning was given, the date it was given, and the circumstances surrounding the incident.

In summary: Record keeping is not simply tedious paper work. It may be badly needed one day. A supervisor who has not been on the witness stand in an arbitration case, and was not able to back up his story with the written facts, is keenly aware of the importance of getting things on the record. But that's learning the hard way. With a little practice, records can be kept easily —and profitably. ◆

We receive numerous calls from civic groups in our community requesting speakers for special occasions. We use this as an opportunity to have members of our organization learn to speak before a group of people. Our purpose is certainly not to develop orators; instead, it is an effort to improve the social prestige of the individual and to build the self-confidence which comes with such activities. Also, it puts our management personnel into close, profitable touch with men of other industries.

—James H. Hunter, in AMA Manufacturing Series No. 219



Do Work & Music Mix?

Here are the facts on background work music—where it will work and where it won't

THERE'S a Hollywood type who has music piped into his swimming pool; it's rigged so it can be heard only underwater. There's a dentist who has his chair wired for music —the melody starts as soon as the patient's head touches the headrest. And there's a filling station where music plays whenever the attendant lifts the gas pump.

These are some of the more bizarre customers carried on the books of companies whose bread-and-butter line is piping "canned" music into hotels, restaurants, factories, and offices. It's a business that figures to keep on growing because management is becoming increasingly convinced that on-the-job music can be a hypo for morale and an aid in stepping up production.

There's nothing new about combining music and work. There have been work chants since the start of civilization—even the U. S. has had a

"tote dat barge" and "I've been workin' on the railroad" era.

Management's recent interest in work music stems mainly from World War II. During the Blitz, industrial plants in England began playing phonograph records as a morale booster and to keep production up while the bombs fell. The program proved itself, so the U. S. adopted the idea.

Music-to-work-by received another boost when a War Production Board study showed that 56 per cent of the plants it surveyed reported there was an increase in production when music was installed; 87 per cent of the plants said music improved morale.

Since those early days, a lot has been learned about background music for plants and offices. A few incidents, such as playing "Deep in the Heart of Texas" during the swing shift, which had the workers clapping hands at the end of every chorus, pointed up the need for programmed music—music designed for plant and office use.

Suitable music

Most companies that have used work music are now pretty well convinced that there's more to it than just picking up a record and giving it a whirl on the turntable. It's generally agreed that a special kind of music is needed for work areas—music that will stay in the background and still give employees a lift. It shouldn't be distracting, but it has to be able to cut through office and plant noises without blaring. What it boils down to is that no music may be better than the wrong kind of music.

A company like Muzak, for example, has refined the art of programming to the point where it now offers three kinds of music—one for public areas like restaurants and hotels, another kind for offices, and a third for factories. The main difference between office and plant music is faster tempo and more brass for factories, slower tempo and more strings for the office. Bulk of the music played for both is of the Hit Parade variety.

Another lesson that has been learned is the value of silent periods. Continuous uninterrupted music has no value, because soon the effects go unnoticed. More or less standard practice now is to play work music on a 15-minute-on, 15-minute-off schedule.

Most of the research that has been done on the effectiveness of work music is highly favorable. There are, of course, variations in these studies, particularly on how much of an influence work music has on production. Some companies using background music credit it with startling increases in output; others don't notice much change. On one point, however, the research results are unanimous—the employees like it, think it improves their working conditions, and are inclined to have a better opinion of their company as a result of it.

In general, it can be said that

background music in plants and offices improves workers' job attitudes. Included in this area of better morale are fringe benefits like: workers seem to get along better; idle conversation is reduced; absenteeism, tardiness, and turnover are lessened.

Effect of music

Fairly typical of the results of surveys that have been made on background work music is a study of supervisors and office workers at General Petroleum Corporation and the Union Tank Car Company. The survey was made after a background music program had been in effect for two years. Here's how the supervisors responded:

100 per cent of the supervisors said music made their work more enjoyable.

98 per cent said it broke monotony.

70 per cent noticed that music made them less tired.

80.8 per cent believed it improved employee relations.

61.5 per cent noticed an increase in productive efficiency.

74.5 per cent said music absorbed the noise of office machines.

42.6 per cent indicated music helped cut nonessential activities such as conversation, visiting.

Office workers at General Petroleum and Union Tank Car Company reacted to work music this way:

93.3 per cent of the office workers said music made work more enjoyable.

91.1 per cent said it broke up the monotony of their jobs.

Muzak technician tapes music programs from a master disc.

77.2 per cent reported music relieved fatigue.

89.5 per cent felt that it made fellow employees pleasanter and more cheerful.

41.4 per cent reported music gave them a feeling of being "well off" in their job.

74.2 per cent believed it improved relationships between management and employees.

74.1 per cent thought their work was more "worthwhile" because of music.

96.6 per cent said they prefered to work in an office that has background work music.

For the most part, background work music seems to provide the greatest benefits on jobs where the

work is repetitive and monotonous, where the noise of office machines or plant equipment is likely to produce sound fatigue; jobs where nervous tension may be a factor.

Properly used, the music is geared to offset fatigue periods during the workday, which usually occur around 10:30 A.M. and 3:30 P.M. With programmed music, this is when the most stimulating selections are played.

Where won't background music work? It's impractical where a few workers are spread out over a large area. The cost per employee would be too high to make it worthwhile. Other conditions that pretty much rule out use of background work music are jobs that take the workers outside a great deal of the time and operations that are so noisy that even Hi-Fi can't cut through.

Statistics from one of the leading companies that provides "canned" work music indicate office installations outnumber factory use by about a three-to-two ratio. Biggest users in the office category are insurance companies and banks. Leaders in the industrial field include electronic and electrical manufacturers; light fabricating, precision manufacturing, and assembly industries; needle trades; food processing and packaging industries.

The error rate

Companies which have put in background music systems frequently find that for the first month or so it may be distracting because it's a novelty. In addition, there may be a small percentage of people who will make more errors with music than they would without it. Most of the

Background music is used to boost morale in the milling department of Orenduff & Kappel, Inc., Westbury, L. I., aircraft parts maker.

evidence, however, indicates that work music reduces the error rate considerably more than it contributes to it.

In making its studies of the kind of music people like, Muzak Corporation has unearthed some interesting facts on changes in musical tastes in recent years and differences in the kind of music liked by office workers and the type preferred by factory employees.

In comparing the musical preferences of industrial employees in 1944 and again in 1953, these are the main trends: Although about the same percentage of workers like semi-classical music, more of them expressed a positive dislike of this kind of music in 1953 than in 1944. In 1944 only 14.6 per cent said they didn't care for semiclassical music; in 1953 25.7 per cent said they didn't like it. Waltzes have gained in popularity (71.7 per cent liked them in 1944, 82.4 per cent liked them in '53), so have polkas and folk dances (48.3 per cent liked them in '44, 61.9 per cent in '53). Hawaiian music is less popular than in 1944, and more industrial workers now have a definite dislike of hillbilly music than before.

The main change in the tastes of office workers is a greater dislike of semiclassical music — 5.2 per cent didn't care for it in 1944, while in 1953, 14.9 per cent said they didn't care for it. Around 34 per cent said they didn't like polkas and folk dances in 1944; in '53, 43.8 per cent said they didn't like them.

Popular tunes are the favorites of both office and factory workers. Office workers seem to like semiclassical and classical music much better than factory employees, while more factory workers like polkas and folk dances than do office workers.

This study of the difference in musical tastes of plant and office workers is just another indication of the need for programming. Background music can serve a useful purpose in both the plant and the office, but it has to be used correctly. ◆

How to Kill a Coyote

Sometimes it takes a really novel approach to solve a problem. In Montana, ranchers used to have a lot of trouble with coyotes. They're smart animals—hard to shoot and hard to trap. For years the state had offered $5 for each dead coyote, but they still kept on increasing. Then someone in the Department of Agriculture came up with an idea—offer $2 for each live baby coyote. That did it. Coyotes were delivered by the thousands. The Department of Agriculture kept them and fed them until they were a little older and then infected them with a contagious skin disease which destroyed most of their fur. The coyotes were then turned loose to roam with the other coyotes, who in turn got the skin disease and lost a lot of fur. When winter came, the coyotes couldn't keep warm and died by the thousands.

—From a letter sent to salesmen by H. Y. Barrow, Secretary, Magnus Chemical Company, Inc., Garwood, N. J.

Ask Them What They Think ...Then Listen

By Harold P. Zelko

Listening to employees is an important—and difficult—part of communication and an essential part of management. But often the listening phase must be preceded by an "asking" phase

SUPERVISORS in the packaging and shipping department of one company were told by top management that a number of small trucks had been bought for moving materials around the warehouses. These trucks were to be put in use immediately, and would involve some major changes in the former method of handling materials and cartons for shipping.

With one exception, all the supervisors *told* their men they would start using the trucks the next day, with a brief time out for instruction. On the following day, there was much confusion, accompanied by grumbling and dissatisfaction from the workers.

One of the supervisors, however, had called his workers together beforehand and *explained* that the company had bought the new trucks and that they were available for use. He *asked* them how they felt the trucks could best be used. He *lis-*

tened to the several suggestions that were made. Then he asked if any of the workers wanted to try a new truck. There was an immediate volunteer. During the day the other workers watched the new truck in operation and noticed its advantages over the old equipment. By the next day they were all asking the supervisor to assign them to a new truck, and a happy work group was efficiently carrying out the new system.

A Navy commander brought his ship into port for one night after a long stretch at sea. He assembled the men and announced they could all have shore leave, with curfew at midnight. After dinner that night, and during the course of the evening, he noticed that most of the men were still on board. He said nothing until almost midnight, when he asked a junior officer why the men hadn't taken leave.

"We inquired, sir, and found that there was no transportation back here from town that would get the men back before midnight. The last bus would reach here at twelve-twenty—too late for your curfew."

"Why didn't someone tell me—we could have changed the curfew hour to twelve-thirty" the commander asked heatedly.

"You didn't ask us about it, sir."

The supervisor in the first example used asking and listening as tools for managing people. He thereby avoided a problem, made a satisfactory work method change, and achieved worker participation and recognition. In the case of the Navy commander, the junior officer could be critized for not speaking up, but the fact remains that the commander didn't call in anyone else for an opinion when he was scheduling shore leave. In other words, he didn't ask so he didn't get a chance to listen.

The chief concern of management today is handling people as people, not as cogs in a machine. This has led to an increased emphasis on communications. Treating people as people means recognizing the fact that everyone likes to know what's going on, likes to contribute, and likes to be recognized as a participant. Therefore, the goals of management communication are to inform (downward communication), to draw from (upward communication), and to recognize and allow for participation. There is no better tool for accomplishing the last two goals than listening.

This doesn't mean that a manager

Mr. Zelko has been Professor of Public Speaking, Pennsylvania State University, since 1936, with time out to act as Director of Training, Internal Revenue Service, U. S. Treasury Department; Director of Training, Office of Price Stabilization; and Director of Training, Ohio River Division, Corps of Engineers, Department of the Army. He has also been a practicing attorney and consultant on training, communications, conference leadership, etc., in industry and government, and has written many articles for management literature.

can suddenly decide to use the listening tool as he would a new wrench or screwdriver and immediately find it bringing desired results. Like all principles of human relations, the art of listening is something that has to become a part of a person. While there are specific methods and techniques, they would be of little value if the manager didn't have a sincere interest in listening, which must, of course, start inside himself.

In the Johnson and Johnson Company's policy statement on communication, the importance of listening is put this way: "By far the most effective method of tapping the ideas of subordinates is sympathetic listening in the many day-to-day contacts."

Values of listening

Estimates indicate that supervisors spend about 70 per cent of the work day communicating. One study shows that of the total time spent on communications about 9 per cent is devoted to writing, 16 per cent to reading, 30 per cent, speaking, and 45 per cent, listening. While this varies with different jobs and other factors, more time is generally spent in listening than in any other communication activity.

Good listening does not consist of merely sitting back while someone else talks. Listening must be active. The good listener makes every effort to understand the person who is speaking, by putting himself in the other's place, by analyzing and becoming sensitive to his moods, his wants, his needs and his feelings.

The first step in becoming a better listener is to realize the benefits. Five of the most important are:

1. Good listening adds to our knowledge and information. The more attention and concentration we give the speaker, the better we will understand and retain what he says.

2. It helps us make better decisions. Drawing on the combined experience of subordinates, superiors, and other supervisors through group meetings and face-to-face contacts, helps us develop better judgment as well as making more facts available.

3. It leads to better work and cooperation from others. When a man feels that you are sincerely interested in him, that you want to hear his thoughts, problems, and opinions, he both respects you and the organization you represent. He further feels that this is *his* organization, and his pride in being part of a team makes him want to work at his peak ability.

4. Good listening stimulates the speaker and helps gain his respect. Have you ever talked to someone who listened with an eager, alert, wide-eyed look of interest and attention? Do you remember how this stimulated you to do a better job as a speaker? And did you notice that such an alert listener usually stimulates others around him to be good listeners, too? Finally, you were bound to feel increased respect for such a person.

5. It leads to greater enjoyment of what we hear. While it isn't vital to listen actively when we're trying to

enjoy a movie, a play, or an entertainer, we will probably enjoy all of them more if we do so. It will also help us develop more critical and appreciative standards for all that we hear.

Situations and barriers

Communication always takes place within a particular situation and among many barriers. The chief oral communication situations are informal personal contacts, interviews, conferences and meetings, and speeches to groups. The listener's responsibility remains pretty much the same in all of them. In a two-person relationship, the major emphasis in listening should be on understanding the other person, putting yourself in his position, analyzing what he is saying and why he is saying it. In a conference, the listener should listen to *all* participants, whether he agrees with their point of view or not.

Where the listener becomes a speaker, he should first have understood the other's point before he replies. Then he will first state it accurately and fairly, pointing out, if he can, areas of agreement; next state his own position in as noncontroversial a manner as possible; and lastly defend his own position.

Some of the chief barriers to effective listening are:

1. Status and position of speaker and listener
2. Attitudes and prejudices
3. "I" versus "you" feeling—being more concerned with your own interests than what the other person is saying
4. Desire to contradict instead of to understand
5. Desire to keep things as they are
6. Physical conditions
7. Language
8. Rate of speaking and listening

To overcome these barriers, we must put ourselves in the position of the speaker, assume his status. We must try to rid ourselves of unfavorable attitudes toward him or his message. We must be less self-centered ("I") and more speaker-centered ("you"). We must be more open-minded about suggested changes, and try to understand before we refute a point being made by another.

Use your free time

Because the average speaking rate is 125 words a minute and the capacity to listen is about 400 to 500 words a minute, we have about three quarters of our listening time free. If we let our minds wander and daydream while another is talking, we'll miss much of what he says. Instead, we must use this extra time to look for main ideas, weigh evidence, work out the speaker's purpose, and apply what we hear to our own uses and interests.

Because we attach different meanings to the same words, and because words take on different meanings in different situations, speaker and listener do not always interpret language the same way. We must then

try to understand the speaker's language as he intended it.

Program for listening

Developing a program for better listening includes what one does before, during, and after a situation involving communications.

Before going to an interview, conference, etc., look ahead and analyze the other person you'll be communicating with. What kind of person is he? What are his interests, feelings, background? Think about what he is going to say and what it means to you.

During the time he is talking, concentrate on his message—its purpose, its main points. Relate what he has to say to your own situation and needs. Avoid personal prejudice, selfish interests, and daydreaming. Take notes of essential points.

After you've listened, review the speaker's purpose and main points, and apply what he said to your own situation.

To develop and apply good listening habits, keep checking yourself with the following questions:

Self-Analysis List for Better Listening

General

1. Do I have a listening attitude?
2. Am I listening objectively?
3. Am I speaker-centered or self-centered?
4. Do I try to resolve barriers?
5. Do I take advantage of extra listening time?
6. Do I anticipate the situation and plan for it?
7. Can I reconstruct the speaker's purpose and ideas?

In Conferences and Meetings

8. Do I submit as much as I should to my workers for their judgment and advice?
9. Do I let them talk sufficiently?
10. Do I listen to all equally?
11. As a conference member, do I respect and understand others, then try to reply tactfully?

In Interviews and Interpersonal Relations

12. Do I plan properly, analyzing the other person?
13. Do I put myself in his position?
14. Do I let him talk freely?
15. Do I listen for understanding, not just to refute?
16. Have I made the physical situation as comfortable as possible?
17. Is my manner friendly and sympathetic? ◆

Any man worth his salt will stick up for what he believes right, but it takes a slightly bigger man to acknowledge instantly and without reservation that he is in error.

—General Peyton C. March, quoted in *Forbes Magazine of Business and Finance*

Revere Cuts Accident Rate 50% with Safety Test

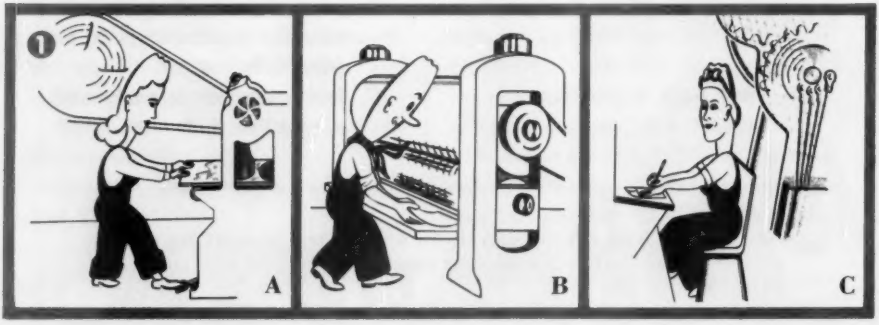
Test is used to pinpoint safety training needs and for pre-employment screening

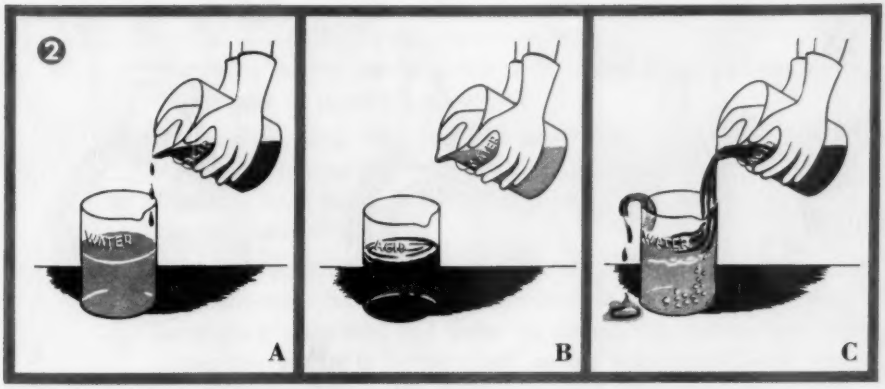
REVERE Copper and Brass operates on the belief that you can train people better by telling them what they don't know rather than going over information they already have under their belts. In line with this, the company, for the past ten years, has been giving its employees a safety test. Purpose of the test is to find out what the Revere people don't know about safety and then concentrate instruction on these areas.

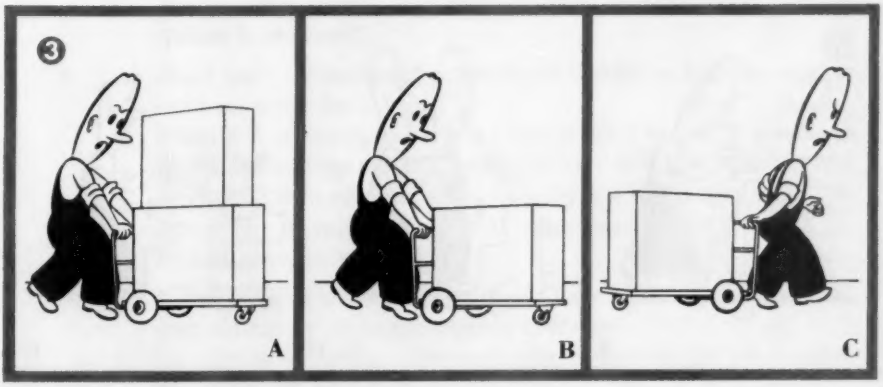
Is the program working? Statistics indicate it is. During the last 10 years the accident frequency rate at Revere has been cut almost 50%, dropping more or less steadily from 12.9 accidents per million manhours worked in 1945 to 6.5 per million manhours in 1955. Since no other major changes were made in the company's safety program, Revere believes the safety test has caused the improvement.

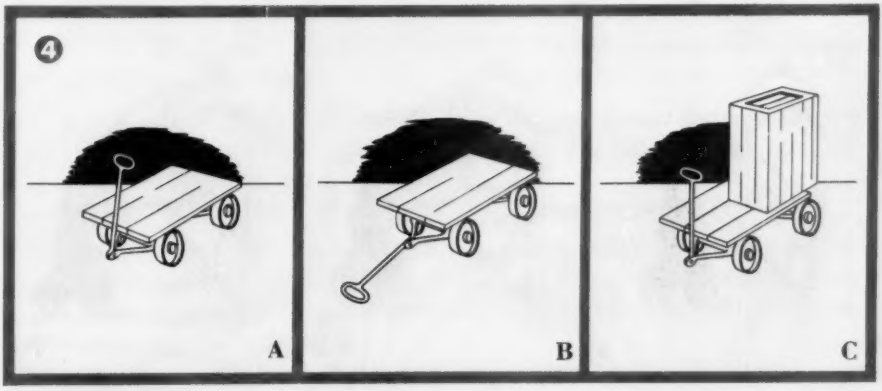
Following are selections from this test. In each of the sets of three drawings there may be one, two, or three illustrations that show unsafe practices. In some cases there may be no safety violations. Check your own safety knowledge by picking the illustrations you think show safety violations. Answers are on page 45.

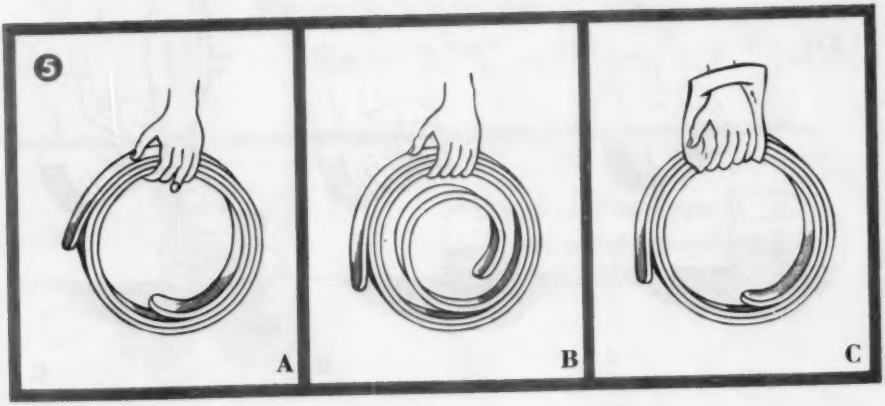
Cartoons are printed with permission of Science Research Associates, Chicago, who publish and distribute the test for industrial users.

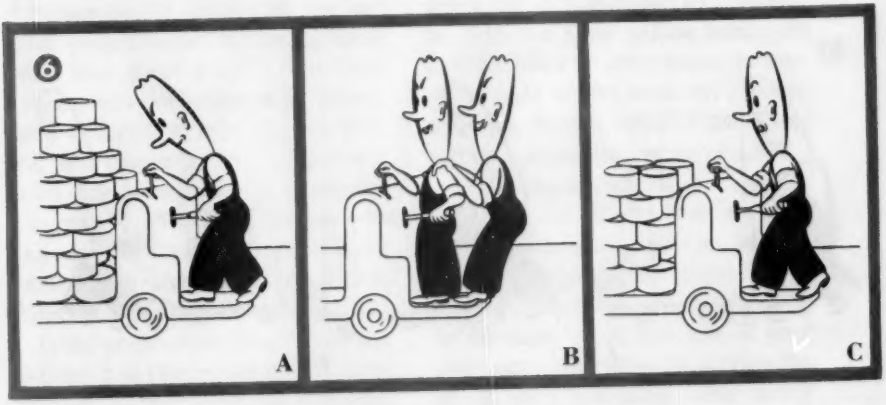


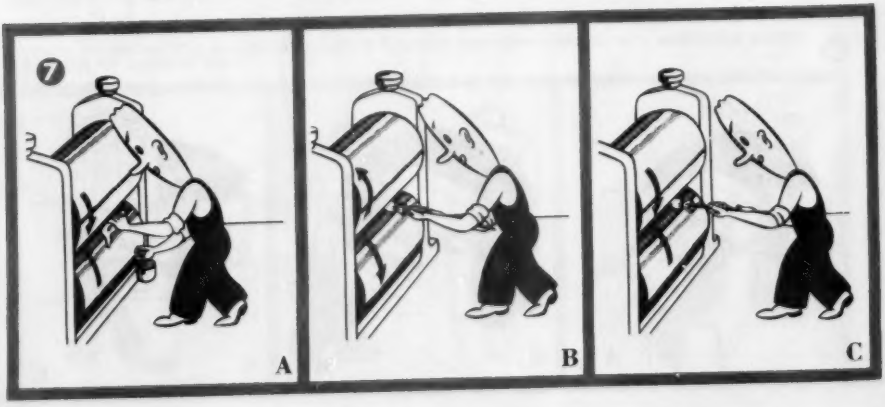

2
WATER
A
ACID
B
WATER
C


3
A
B
C


4
A
B
C


5
A
B
C


6
A
B
C


7
A
B
C

answers to safety quiz

Following are the unsafe practices illustrated in the cartoon strips that appear on pages 42, 43 and 44.

1 **A** Machine operators with long hair should wear caps, nets or other covering to prevent hair from being caught in machinery.

B Neckties, loose fitting or flowing clothing should not be worn near moving machinery.

2 **B** When acid is being diluted, the acid should be poured into the water, never the water into the acid. The reason for this is that ionization takes place when acid and water are mixed, this creates heat and causes the mixture to bubble which could result in acid being spattered on the employee. However, by pouring small quantities of acid into water, it is quickly diluted and spattering is reduced.

C Acid is being poured in a sloppy manner; worker is in danger of spilling it on himself.

3 **A** Hand truck is overloaded and material is piled so high that worker can't see where he is going.

C When it is necessary to move a three-wheeled wagon, it is safer to push it rather than pull it. The reason for this is that better control is obtained with two hands and secondly, the single third wheel has a tendency to swing which could cause the operator to strain his back or shoulder muscles.

4 **B** Where possible wagon handles should be left in an upright position, to avoid danger of people tripping over them.

C Load on hand truck is improperly placed. It could fall off or cause the cart to tip.

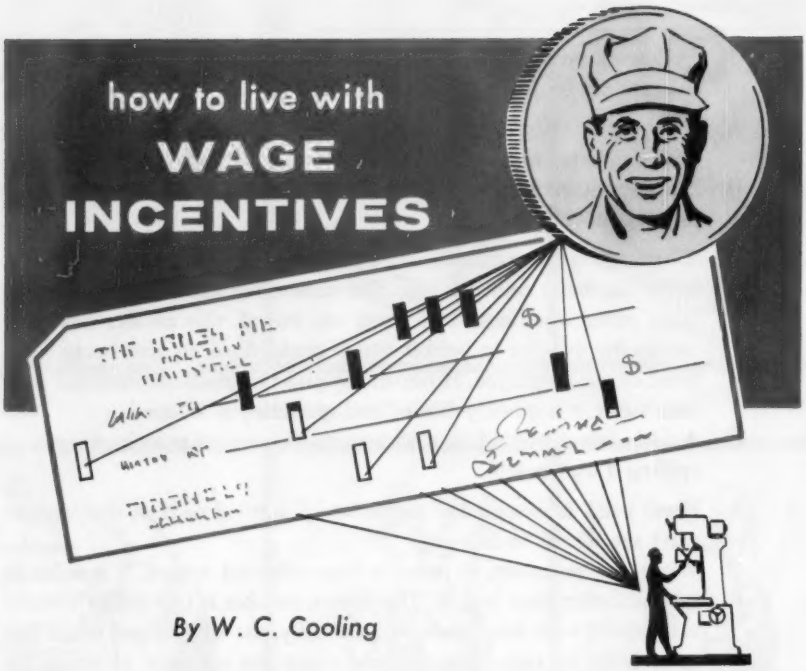
5 **A, B** Both of these methods are wrong because the employee does not have hand protection against metal slivers and rough edges.

B If metal is springy, both ends should be tied to prevent fingers from being pinched.

6 **A** Load on truck is piled too high. There is danger that some of the materials might fall off; also the load is so high the truck operator cannot see where he is going.

B Truck is not designed to carry more than one person safely.

7 **A, C** When polishing rolls by hand, where possible the rolls should be run in reverse so there is no danger of worker's hand being crushed. And when compounds are used to clean the rolls, they should be applied with a stick.



By W. C. Cooling

On the firing line, it's up to the supervisor to make wage incentives work. Here's how to do it

WHAT IS a wage incentive? It's merely a contract. The employer agrees that he will maintain certain definite conditions around the work place and the employee agrees that if these working conditions are maintained he will turn out a certain number of pieces per hour at his regular wage. In turn the company agrees that it will pay an incentive bonus for any production above the base rate.

Wage incentives can be called by a hundred different names; they can be figured by a score of different methods, but still all they amount to is a contract between the company and the workers. This is the simple, practical way wage incentives are described in A. B. Sugar Company's *Motion-Time-Analysis Bulletin*.

Sound incentive principles, fair standards, conscientious administra-

This article is reprinted from *Front Line Cost Administration* by W. C. Cooling, courtesy of The Chilton Company, Philadelphia, Pa.

tion of all phases of the incentive system, and willingness of workers to work on incentive, form the foundation of successful wage incentive system. The policy makers of management establish incentive principles, many times in the contract signed with the union. The industrial engineering group or time study group determines the production standards for the various jobs, but administration of a wage incentive plan is in the hands of the foreman, assisted by staff services such as the time study and industrial relations groups. The last but most important part of a successful wage incentive system is the willingness of the employee to work with it. Cooperation by the worker depends upon sound principles, fair standards, and most of all on conscientious administration of the incentive system.

Foreman is administrator

The foreman is the front line administrator of the wage incentive system. He is the only representative of management who has daily contact with the work and the worker. Although the industrial relations and time study groups assist the foreman with interpretations of contract agreements, company principles, and production standards, the foreman is the only person who is in a position to administer those items at the worker's level.

The work necessary to study and develop a new incentive standard is fairly simple. After detailed time studies of the job are made, industrial engineering logic and mechanics are used, and a fair incentive standard is developed. The next step is to place the standard in operation, giving the worker the opportunity to increase pay and enabling the company to control costs.

This is where the term "incentive" comes in. Don't confuse incentive with "pay." Pay is nothing more than an accounting function based on the output of the worker. This output is the result of the effective use of the worker's skill and effort; the worker must have the incentive to develop and use his abilities.

Where does this incentive come from? It doesn't come only from the opportunity to increase pay, or from the fact that management establishes fair standards and principles, or that the workers like the way the foreman operates. The worker's incentive to work is the result of a combination of the above items, welded together under fair administration

---

Since 1950, Mr. Cooling has been Manager of Methods and Standards for International Resistance Company. He is also active as a civilian consultant to the Director of Maintenance, Office of the Secretary of Defense, Properties and Installations. Formerly, he was an industrial engineer for the U. S. Rubber Co. and Atlantic Refining Co. A frequent contributor to business publications, he also teaches "Time and Motion Study" at Temple University.

by a foreman capable of developing in the worker a sense of pride in himself, in his department, in his company, and most of all in his work.

This is the proper atmosphere in which to introduce new incentive standards. The foreman must be prepared to do the talking to the worker, but he should have a time study engineer on hand as a consultant. Why? Because the foreman is the leader of the workers. When he allows any staff man to take over any part of his job, he is giving away his leadership in the eyes of his workers. Effective management has no room for a foreman who turns over portions of his job to staff functions.

When new standard introduced

This is what the foreman should be prepared to do for his workers whenever a new standard is introduced:

1. Review the conditions under which the job was studied. This includes:
   (a) Workplace
   (b) Materials
   (c) Methods
   (d) Quality specifications
2. Review the operator's performance during the study, covering:
   (a) Working pace
   (b) Earning potential if same work pace is maintained.
3. Review the method by which the operator can compute his earnings.

In the course of introducing a wage incentive system, the foreman, by his presentation, must build confidence and create in the worker the desire to give the standard a fair trial. How the foreman does this and how effective he is depends on the foreman's leadership status with the worker and the worker's personality.

These are some of the impressions he must develop in his discussion with the worker when introducing new standards. That he, as foreman:

1. Is positive that the job was time-studied under normal operating conditions.
2. Has determined that the standard was developed around those conditions.
3. Will guarantee that the job will continue to be performed under the same conditions or the standard will be adjusted.
4. Has thoroughly reviewed the standard and firmly believes it to be fair and attainable.
5. Is sure the standard will be given a fair trial.
6. Sincerely hopes the worker will do well on the standard.
7. Expects the worker will contact him, not the union, not another worker, and not the engineer, if there are any questions on any standard.

Orientation necessary

Thorough orientation of the operators is necessary for a successful wage incentive system. Operators must have an understanding of how the wage incentive system works, what they must produce to meet

their own incentive goal and how to compute their earnings. The foreman is responsible for the orientation of his operators so that they will know exactly how they stand.

The "fair trial"

After this discussion with the worker, the foreman has paved the way for a fair trial of the new incentive standards. A "fair trial" is described in a typical contract clause as follows: "It is understood that the Company will make every effort to establish fair and correct rates, and that employees and the Union will give every rate a trial of not less than five (5) working days by working conscientiously against the standard. If after the five (5) day trial period, the Union is not satisfied that an average operator, properly qualified and working conscientiously, can earn 20% bonus, a recheck may be requested in writing. The Company will be given the opportunity of proving that a fair rate exists and failing to do so must change the standard to provide a 20% bonus and such new standard shall be retroactive to the date the disputed rate was made effective." (This is from an agreement between an eastern electrical parts manufacturer and International Union of Electrical Workers, CIO.)

This clause encourages a fair trial. Here is a second example of a fair trial clause that is more difficult to administer: "On any change of construction or product which is paid on a piece rate basis, it is understood that a trial period, the length of which shall be agreed upon in each instance (during which not less than the average earnings on the previous job shall be paid) shall be allowed before the piece rates are finally set in order to permit the operation to become settled, and the normal average efficiency to be established." This example gives the foreman very little aid in his job of seeing that the rate gets a fair trial. It is not definite and causes trouble for the foreman in these areas:

1. There is always a possibility of a dispute over the length of the trial period.

2. Since the worker is guaranteed average earnings, there is no incentive to give the rate a fair trial.

3. There is no definition of the operator's working pace. There is no incentive to give the rate a fair trial.

This second example was not mentioned to discourage foremen in their job of supervising the fair trial of rates, but rather to call attention to weak contract clauses. To properly administer wage incentives, the foreman must recognize weak areas in the contract and plan his administration job around them.

Maintenance of standards

Maintenance of wage incentive standards is a function of time study activity that must not be neglected. Just as mechanical equipment must have preventive maintenance to avoid breakdowns, so must a wage incentive system have a maintenance

program to avoid breakdowns. Most breakdowns in an incentive system are the result of four causes:

1. Work stoppages.
   (a) Equipment failure
   (b) No material
   (c) No job assignment
2. Work impediments.
   (a) Equipment functioning at a reduced operating speed
   (b) Defective material
   (c) Transferring operator from job to job
3. Work added to an operation
4. Work deleted from an operation

The first two causes, work stoppages and work impediments, come under the heading of preventive maintenance. Preplanning of equipment maintenance, material control, and production control are necessary to prevent breakdown of the wage incentive system from these causes.

Fast adjustment to jobs where the work elements have changed is necessary to protect the worker's pay and to protect the company from excessive costs. The foreman, in his job as front-line administrator, must take steps to prevent situations that change work elements from occurring, or if he is unable to do so, must immediately call on staff functions to eliminate the "breakdowns" in his wage incentive system. Stating it in another manner, he must restore the job to its former efficiency. Sloppy administration of wage incentives

"Patience about promotion, lad. We of top management won't live forever you know."

adds more cost for management and creates more dissatisfaction among the workers than almost any other management function.

The foreman must never evaluate the effects of a change in material, methods, quality standards, or equipment. It is the function of the time study group to evaluate the change in time. There are many cases where an assumption was made that a change would not affect the allowed time of an operation. These cases almost always end up in one of two ways:

1. Grievances, with the resulting costs in production time and collective bargaining time, where work has been added.

2. Loose standards, with no improvement in labor costs, when work has been deleted from the job.

It is also well to stress that if a change is made that did not alter the time of the job, time study records must still have a supplement to show that there was a change and that the change was evaluated.

Summation

The previous paragraphs may be summed up this way: the time study group is properly organized for effective maintenance of production standards, provided that foremen accept and fulfill their responsibility of notifying time study when maintenance work is necessary. It is impossible for the foreman to accomplish this without the cooperation and aid of all key management personnel. A large company has outlined the following as a guide to its production supervision for maintenance of wage incentives:

A. Before a Standard Is Established or, Before a Change of Method

1. In conjunction with the product engineer, make certain that manufacturing processes are correct before any further steps are taken.

2. With the aid of the industrial engineering department (manufacturing engineering and methods engineering), provide proper machines, equipment, or work stations to perform the work most efficiently.

3. Keep the machines and equipment in such a state that they are capable of producing work in accordance with manufacturing specifications by utilizing available staff departments.

4. Man the machines and work stations with qualified operators.

5. Make sure that operators who are to be time studied, have an average amount of skill; that they have the mechanical ability, dexterity, muscular coordination, and physical qualifications needed for the job.

6. In conjunction with the methods and standards engineer, inform the union representative and the operators that the studies are to be taken, giving the reason why.

7. While studies are being taken, check with the methods and standards engineer. Satisfy yourself that the performances of the operators could be considered about average.

8. Review the results of the studies with the methods and standards

engineer, learning all the unusual conditions that have influenced the studies.

B. After Standards Have Been Established

1. Once the standards have been established, follow the methods and specifications that have been set up, keeping constant the conditions which effect time standards for the work.

2. Spot check operators on new operations after the standards go into effect, particularly during the trial period. In this manner, the company can be certain that the new standard has been given a fair trial.

3. When any operation or departmental change is made affecting such things as workplace, methods, layout, or material, notify the methods and standards department so that the change may be evaluated and the standard corrected, if necessary.

C. After an Operator or Shop Steward Advances Disagreement or Files Grievance Against a Standard

1. Review with the shop steward the point of dispute and find out about any conditions surrounding the operation that would create the problem (method changes, material changes, design changes, manufacturing specifications, layout changes, etc.).

2. When the cause of the disagreement has been determined, go to the department head handling this function and present the problem.

3. When the facts of the disagreement have been determined, check with methods and standards to determine if the non-standard production is temporary or permanent. If the non-standard production is temporary, the operator is paid on the basis of non-standard production until the problem is removed. If the non-standard production is permanent, a recheck is requested from methods and standards, and the operator is paid on the basis of non-standard production until the effective date of the new standard. At this point, follow the recommendations outlined in "A" and "B" of this procedure guide.

D. When Shop Supervision Questions a Standard

1. Review with the methods and standards engineer the point in question, and together investigate any conditions surrounding the operation that would create the problem (methods changes, material changes, design changes, manufacturing specifications, layout changes, etc.).

2. When the cause of the problem has been determined, go to the department head handling this function and present the problem.

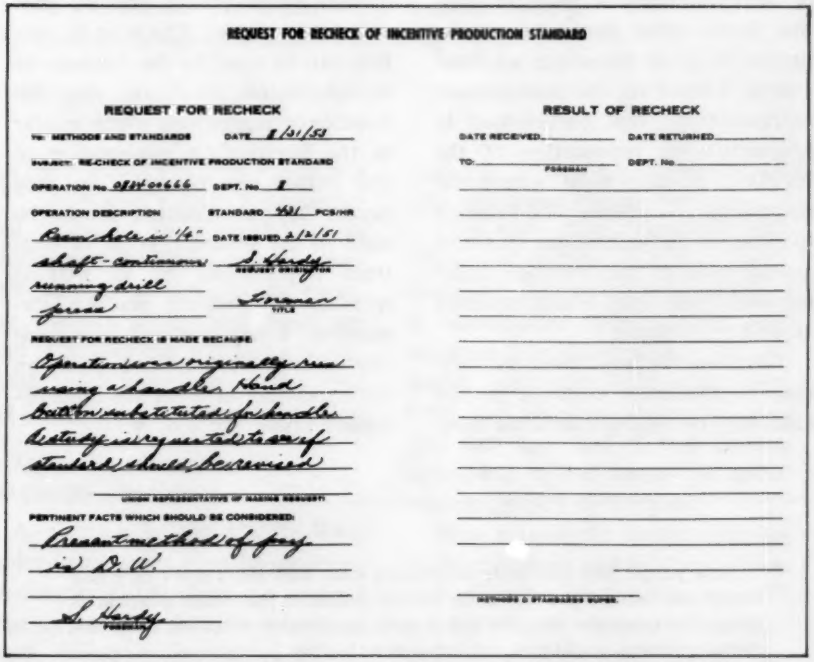
3. At this time, or after a period of investigation, determine if non-standard production exists, and if so, whether the condition is temporary or permanent. If the condition is temporary, the operator is paid on the basis of non-standard production until the problem is removed. If the problem is permanent, the operation will be rechecked by the methods and standards department. This action is initiated after a request for a recheck is filed. At this point, follow

the procedure as outlined through steps "A" and "B."

Figure 1 below is an example of a form used to request a recheck. This recheck step is of great importance to everyone involved in the wage incentive system. Wage incentive standards must be kept in line and based on "fair day's pay for fair day's work" principles, and everyone concerned must be informed of changes or of contemplated changes. For that reason a three-copy form is used; the original is retained by the time study group, the second copy is kept by the foreman, and the third copy is given to the union steward.

In the recheck example shown in Figure I, a foreman filed the recheck request because of a change of method. The actual change would appear to slow the operation, but the foreman doesn't evaluate the change, he just files a recheck request. It is part of his function as a representative of the worker and the company to see that the change is properly evaluated.

With the maintenance procedure previously discussed, the foreman functions in his role as the administrator of wage incentives by coordinating the activities of all other staff functions that are required. That is his job, and if conscientiously performed will insure a strong wage incentive system which benefits the worker and the company. *(Turn Page)*



REQUEST FOR RECHECK OF INCENTIVE PRODUCTION STANDARD

REQUEST FOR RECHECK

TO: METHODS AND STANDARDS DATE 2/21/51

SUBJECT: RE-CHECK OF INCENTIVE PRODUCTION STANDARD

OPERATION No. 0814-00666 DEPT. No. 2

OPERATION DESCRIPTION STANDARD 421 PCS/HR

Ream hole in 1/4" shaft - continuous running drill press

DATE ISSUED 2/2/51

S. Hardy
REQUEST ORIGINATOR

Foreman
TITLE

REQUEST FOR RECHECK IS MADE BECAUSE:

Operation was originally run using a handle. Hand button was substituted for handle. A study is required to see if standard should be revised.

UNION REPRESENTATIVE OF MAKING REQUEST

PERTINENT FACTS WHICH SHOULD BE CONSIDERED:

Present method of pay is D. W.

S. Hardy
FOREMAN

RESULT OF RECHECK

DATE RECEIVED DATE RETURNED

TO: FOREMAN DEPT. No.

METHODS & STANDARDS NUMBER

Figure 1.

Whether or not a union is involved, the basic ground rules of the incentive system must be administered by a foreman. Where a union is involved, the ground rules are usually in the company-union contract; without a union, the ground rules are usually written up as a standard practice. In either case, the foreman has the same job.

Carrying out the incentive system is a delicate task. Normally, the foreman is not involved in the actual contract negotiations or in writing up the standard practice for the incentive system. While it's true that the incentive ground rules are printed and the foremen usually receive a copy, there are a few clauses, or interpretations of these clauses, that leave some doubt as to the proper intent or the proper administration. Therefore, the management representatives that participated in negotiation or preparation of the standard practice must accept the responsibility of training the foreman to interpret and administer incentive ground rules in line with the thinking and discussions which centered around each clause.

The process of equipping the foreman to administer incentive ground rules may be regarded by some management people as "training;" actually it should be regarded as a "cost savings" project. No company can ever regain the cost of grievances, and it is very likely that a company can regain contract clauses lost through poor administration, except at a "price."

This training should consist of more than just a meeting to review the ground rules and the intent or administration of these rules. The training must have a "follow through." To make certain this is done, some companies supply their foreman with a write-up of each clause. The write-ups contain: 1) the clause; 2) the intent; and 3) explanation of how to administer the clause. Space should also be provided for remarks. The remarks section can be used by the foreman as he administers the clause. Any difficulties or suggestions which appear in the foreman's administration of that clause can be noted as they occur. This information should be used in the planning stage of contract negotiations or in making revisions of standard practice. Remember, a new contract or a revision of standard practice is based on the experience of front line administration under the old. ◆

How people feel and think determines what they do. I don't care how many new lounges you put in the Ladies' Room, or how many pensions or salary increases you give, the things your people want most you can't buy, namely, dignity, confidence, and belief in each other.

—Richard Guyon, in AMA's *Personnel Series* No. 162

HOW TO GET YOUR IDEAS ACROSS

By Arthur Secord

Speaking the other fellow's language, selling one idea at a time—these and other techniques help the supervisor create a smooth-running department.

WHEN something goes wrong in a supervisor's area, it frequently can be traced to a breakdown in communication. Someone said something to someone else, and the meaning was not understood. Here are four principles that will help a supervisor avoid misunderstandings and get his ideas across most effectively:

1. Speak the other fellows language—simply

A plumber in the Middle West noticed that every time he used hydrochloric acid to clean out a metal pipe he couldn't find the pipe any more. Being an inquisitive fellow, he wrote to a prominent chemical research laboratory in New York City and stated his case.

They wrote him: "Dear Sir: The efficacy of hydrochloric acid is indisputable but the corrosive residue is incompatible with metallic permanence." In about a week the research laboratory received a letter from the plumber stating he was glad they approved of what he was doing—but he still wanted to know what happened to the pipe.

They turned the matter over to another chemist and told him, "For heaven's sake, get the idea across!" So the second chemist wrote the plumber a short note: "Dear Sir: Don't use hydrocholoric acid. It eats

hell out of the pipe!" This got the idea across. You have to speak the other fellow's language, or communication just doesn't take place.

During World War II, I was

called to one of the large plants in Detroit to help on a problem-solving conference.

The problem was stated simply. How could this particular factory speed up its production of a specific war material? Most of the foremen at the conference agreed that the cause of the problem was the "dumb, stupid women who were coming into the shop." One man said, "Do you know what I caught one woman doing? I caught her using a micrometer for a C-clamp and trying to tighten it with a Stillson wrench!"

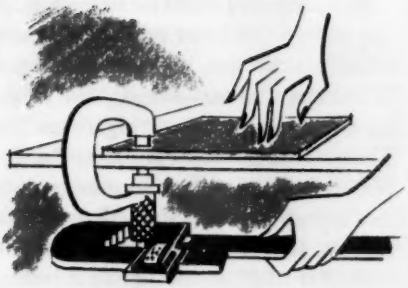
We hadn't been working on the problem very long before one of the foremen said, "I had some pretty good luck on job training with one of those women last week. I took her over to the machine she was going to work on and said, 'You know how the dial on your Mixmaster works? The farther you turn it to the right, the faster it goes?' She said she did, so I said, 'This works the same way.' For everything on that machine, I tried to think of something in her home that worked about the same way, and what do you know? She caught right on!"

Why wouldn't she? He was speaking her language. Yet, many of the foremen were talking to them as though the women had been master machinists for twenty years, and when the women didn't understand, the foremen figured they were stupid. There *was* a certain amount of stupidity involved, but it wasn't on the part of the women. When the foremen spoke the women's language, they understood.

Speaking the other fellow's language, however, isn't quite enough. You have to speak it simply. That takes a good vocabulary. The proof of a good vocabulary is the ability to say everything you wish to say in words that are easy to understand. I have worked with people who thought the only way to prove they had a big vocabulary was to use long

---

Dr. Secord is Director of Community Service and Professor of Speech, Brooklyn College, Brooklyn, N. Y. He received his Ph.D. from the University of Michigan. During a three-year period he has lectured to management and safety groups in 31 states as well as in British Columbia, Quebec, Puerto Rico, and Germany.



words. They would never say, "Don't count your chickens before they hatch," as long as they could say, "Never enumerate your infant fowls before the process of incubation has been completely consummated."

The greatest statements of all time have been expressed simply. You may not agree with me, but I think the greatest user of the English language I've ever heard was Winston Churchill. How about the promise he gave freedom-loving men when he stood pretty much alone on the chalk cliffs of Dover? "Blood, sweat, and tears." Just one-syllable words. How about his tribute to the RAF and RCAF after the battle for Britain had been won? "Never in the realm of human conflict have so many owed so much to so few."

2. *Make one point at a time*

In getting an idea across to another person, there is seldom room for more than one point at a time. You can have subpoints, but there is room for only one major emphasis in any situations where one person is trying to tell something to one or more people.

I saw an example of that not long ago at a management meeting at which three subjects were discussed: materials handling, housekeeping, and safety equipment. As a result, each topic received only partial attention. The "watered down" presentations reduced the value of the meeting.

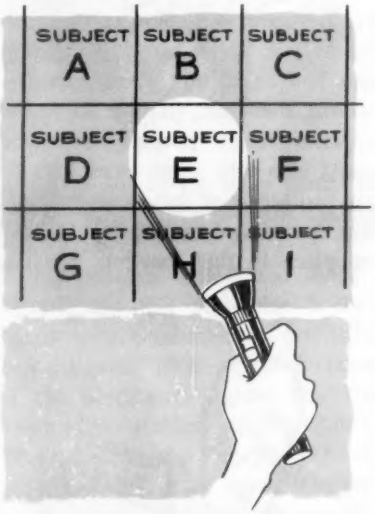
If you have to cover materials handling, housekeeping, and safety equipment, you will probably need at least three meetings. During these meetings you can bring in subpoints. For instance, you could call a meeting to talk about safety equipment and you could talk about guards—leaving them off, putting them on, adjusting them properly—and you could also talk about hard hats or eye protection at that same meeting. But materials handling would have no place in that meeting. Keep it

centered—only one point at a time.

3. Dramatize by an example

After making one point, dramatize it by an example. Using examples puts your idea across with greater impact and clarity.

Until you give an example, a man has nothing he can hold onto that will help him remember what you have said. For example, suppose I tell someone I'm going to talk about "adaptability." I could say, "Be adaptable. If you're adaptable, people will like you. If you aren't



adaptable, they won't like you. It's the keystone of personality. It's the foundation of human relations. Be adaptable."

I could talk like that for 20 minutes, and when I was finished I could ask the person what I had said, he might reply, "I don't know, something about being adaptable."

But suppose I had said something like this: A friend of mine was in a tobacco store one morning when a fellow came in and asked, "Do you have any Pawl Mawl cigarettes?" The clerk said, "Here are some Pawl Mawls." Another customer came in and asked for a pack of "Pal Mal" cigarettes and the tobacconist sold him "Pal Mal" cigarettes. In a little while a man came in and said, "Do you have any Pell Mell cigarettes?" and the clerk sold him "Pell Mells."

Finally, my friend asked the clerk, "How do you pronounce the name of those cigarettes, anyhow?" The clerk said, "If you'll drop around after I close, I'll tell you. Right now I'm selling cigarettes."

If I were to tell that story, the person might remember the cigarettes—and remembering them, might remember that I had said to be adaptable. He might also have an idea of what I meant and what he could do about it at work the next morning. That's why it helps to dramatize any point with an example. It makes your request seem reasonable, and it gives the person a device for remembering it.

4. Never use criticism alone

If the supervisor has to deal with a person critically—and that's part of his job—he should never use criticism alone.

I was recently at a banquet held by a safety club. Two men were called before the group to become members of the Wise Owl Club, an organization composed of people

who have had their sight saved because they were wearing safety glasses.

After the presentation, I heard a man say, "I think that's the silliest thing I ever heard of. Why honor a man for doing what he should do?" Think that one over. Why honor a man for doing what he should do! They were supposed to wear safety glasses and they were—so what?

All you have to do to kill morale in any organization is to cut off all praise for people who do what they should do. I once heard a foreman say, "Don't be hanging around me waiting for praise. If I'm not criticizing you, you're doing all right." A lot of foremen—and a lot of bosses—operate on that same principle.

If you're going to mix praise and criticism, the question arises, how are you going to do it? Are you simply going to use praise before the criticism or are you going to praise a man, then kick his teeth in, then praise him again? This latter method is, of course, the old sandwich technique.

Dale Carnegie and I were pretty good friends. For a long time, I tried to get him to change one thing in his wonderful book, *How to Win Friends and Influence People*. I used all my techniques on him and he used all the Carnegie techniques on me, and neither of us was able to convince the other.

I'm not going to say I'm right—I may not be. I'm just going to tell you what Dale Carnegie's book says and what I believe. The book says, "If you must find fault, always begin with praise and honest appreciation." I say, if you must find fault, begin with the criticism, as tactfully and humanly as you can; then, before you leave the man, give him a pat on the back, a smile of encouragement, or a pleasant word.

I got this idea from a foreman in Philadelphia, where I was leading a discussion of this particular topic. This man asked, "What would you do about a situation like this? I went up to a fellow the other day and said, 'Fred, you're the best turret lathe operator we have in this shop,' and he said, 'I know that—what's wrong?' " He was not enjoying the

praise. He thought the foreman was patting him on the back, feeling for a soft place to slip the knife in.

As soon as you come to me and begin praising me to the skies, I, like so many other people, will say, "I know that. What's wrong?" But, let's put it the other way around. Let's say you begin by saying, "This has got to be changed" and you tell me why and give me an example; and then, before you leave, you give me a pat on the back or a word of encouragement. If, an hour or a week later, you drop around to my machine and say, "By the way, that last lot that came off your machine is the finest I have ever seen," I'll look you squarely in the eye and say, "Thanks very much," because I'll know you mean it.

If you always put praise before criticism, you can never pay a man a compliment because he won't hear it. As soon as praise begins, he'll think, "What have I done now?"

There is a slogan that should be nailed over every supervisor's desk. It reads, "Absence of criticism does not constitute praise." I can't believe you know I'm doing a good job just because you aren't criticizing me every day. I only know it when you tell me so, with a smile, with a pat on the back. Praise. The warmth of one human being reacting to another human being. It will work wonders.

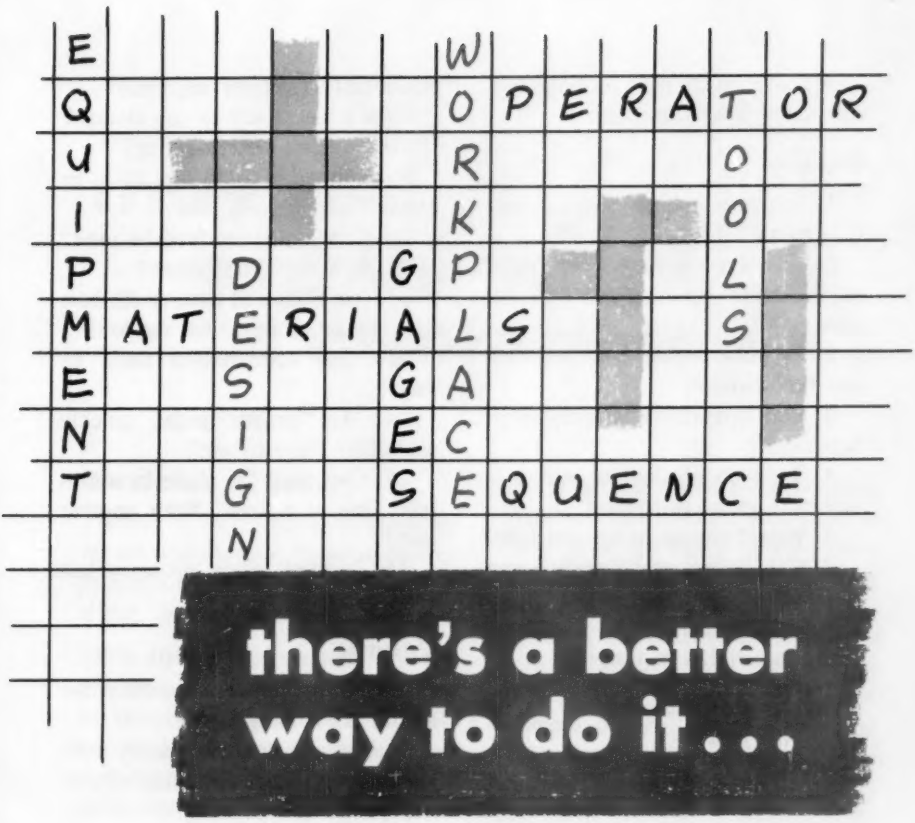
Some people say, "What if I can't find anything to praise a person about?" Isn't it possible that the mere fact that it's so difficult for you to find something to praise a person about may be proof of how badly he needs that praise? We're all human beings. We all operate as human beings. We react as human beings—and we like praise.

When someone says to you, "You know, you're good," it's just natural to say, "How true, how true." Many a man has worked his head off to make a production schedule simply because the boss had said to him, "I put you on this because you're the only man who has the ability to get it out." The man will kill himself to prove that the boss is right.

The boss, obviously, knows a good man when he sees one, and this fellow won't let him down.

In brief, the four principles for getting ideas across, are:

1. Speak the other fellow's language.
2. Never try to sell more than one idea at one time.
3. Use specific examples to dramatize your ideas.
4. In dealing with a person critically, never use only criticism —throw in some praise. ♦



FINDING a better way of doing something is an important part of any supervisor's job. Johnson & Johnson has worked up an effective methods improvement checklist which may give you a new approach to this problem. Pick out specific operations in your department and ask yourself the following questions:

Material

1. Can cheaper material be used without impairing quality?
2. Can lighter gage material be used advantageously? Heavier?
3. Can standard stock parts be purchased?
4. Can some use be found for scrap and rejected parts?
5. Is it received in the most economical length? Size? Weight?
6. Is it utilized to the fullest?
7. Should we change from "make" to "buy," or from "buy" to "make"?

Design

1. Can a part be eliminated completely? Partly?
2. Will it help to change tolerances? Specifications? *(Turn Page)*

3. Can it be changed to make fabrication easier? Cheaper?

Sequence

1. Is every operation necessary? Can part of it be eliminated?
2. Is every operation performed at the right time? Place? In the right way?
3. Is plant layout the best that can be obtained?
4. Can operations be combined? Separated?
5. Is it economical to use conveyors to move materials?
6. Would change in lot size help?
7. Can inspection be made a part of operation?
8. Can operations be performed while material is in transit?

Tools, gages, equipment, and work place

1. Is the machine the best type for the job? Can it be improved? Is it in good condition?
2. Is it running at the right speed?
3. Would it be economical to make it automatic?
4. Are the machine controls conveniently located? Are they easy to use? Are they safe? Can they be made automatic?
5. Must the operator continue holding controls after machine starts for safety's sake or merely because controls are made that way?
6. Is material received and disposed of in suitable containers? Delivered to point of use? Is there any unnecessary handling?
7. Are tools and materials prepositioned in proper sequence?
8. Is it necessary to use clamps? If so, are clamps quick-acting?
9. Is it easy to locate parts in fixture?
10. Can automatic feed be used?
11. Is disposal automatic?
12. Are tools and fixtures the best that can be designed for the job?
13. Can combination tools be used?
14. Are proper gages quickly available? Easy to use?
15. Can parts be made in multiple? One at a time? With another part?
16. Is work place properly laid out?

Operator

1. Can he perform his work either sitting or standing?
2. Does he do unnecessary positioning? Holding? Reaching? Bending? Turning? Walking?
3. Is he properly performing the job? Would further instruction help?
4. Will it help to change to a taller operator? A shorter one? A more dextrous one?
5. Is material handling by operator reduced to a minimum?
6. Are both hands productively occupied?
7. Is the work balanced between the two hands?
8. Can work now being done by the hands be relieved by foot devices? Automatic devices? Holding jigs? Indexing fixtures?
9. Are operators on similar jobs using the same methods? ◆

they're saying in conferences...

Dividends of Safety

Thomas J. Berk, Safety Consultant, Health and Welfare Division, Metropolitan Life Insurance Company, at AMA Manufacturing Conference.

"A 10 per cent reduction in the frequency of accidents represents an annual savings of about $1,250 for each 100 employees or a 6 per cent return on $20,000. But the real dividends of safety are the lives saved, the limbs saved, the homes saved and the human sufferings saved." A low accident rate is the result of a well organized and carefully planned program; "it is not the result of spasmodic efforts. The safety program must be designed to fit in with the operating procedure of the organization; safety factors must be integrated in all working procedures; and, of most importance, the safety program must have active support of management, supervisors, and employees."

An accident involving an injury to an employee imposes a direct charge on the employer in payment of compensation, necessary medical expenses, or insurance premium. In addition to the direct charges, there are indirect costs of time lost by other employees and supervisors, the economic loss because of the injured person's absence, the employment and training of a replacement, curtailment of production, damage to tools and equipment, the spoilage of raw or finished products. It has been estimated that the indirect costs incident to personal injury accidents alone average approximately four times as much as the direct costs of such accidents.

Off-the-job accidents are costly, too. In some states the employer must compensate the employee for at least a portion of the income lost because of accidents resulting from non-occupational causes. In any case there is an economic loss from off-the-job accidents because of absenteeism and delayed production. "The need for integrating off-the-job safety activities in occupational safety programs is becoming increasingly apparent." *(Turn Page)*

Get Set for Automation

C. H. Fawkner, Special Engineering Assistant to the Plant Engineer, Plastics Division, Monsanto Chemical Company, at AMA Top Management Conference.

Fortunately, automation will not arrive overnight; with timely consideration of the problems it presents, "we shall rise to the occasion." Ultimately, the automatic factory will be one that starts with raw materials and operates continuously to produce a product or family of related products. The production process will be completely integrated, programmed, and controlled by computers, with a minimum of human intervention. The automated company will consist of a family of such automatic factories, separated geographically, but closely knit by rapid communications, mechanical data processing and interpretation, and a streamlined management structure to provide the necessary human insight and evaluation of data too abstract for computer analysis.

As the factory becomes more nearly automatic, it will become smaller and more compact, with a minimum of in-process inventory. Operations will become more nearly continuous, with increased emphasis on accurate planning of production schedules and programming and earlier anticipation of schedule changes. Its personnel will be more highly specialized, with less need for semi- and non-skilled labor, larger groups of skilled technicians standing by for adjustments or repairs, and increased demand for statisticians and systems engineers. More automatic recording and feed-back of performance records to a central record activity will reduce the need for clerical personnel and consolidate such activities as accounting, inventory control, and disbursing. There will be continuous automatic sampling, analysis, and correction, reducing the need for separate control laboratories and on-the-job inspectors. ◆

The Problem of Noise

Noise in industry has become an increasingly serious problem. Management's interest in controlling noise has lead to the creation of completely new kinds of businesses. The Accoustical Materials Association estimates sales of member companies at $50 million, an increase of $40 million over 1947.

New ideas are constantly being introduced to quiet such products as hot-air furnaces, diesel engines, pneumatic tools, and jet-engine test cells. Ultraquiet outboard motors are being produced. Airports have revamped take-off and landing areas to reduce the periodic roar endured by nearby residents. And in January the Accoustical Society of America announced a new publication, *Noise Control.*

LETTERS TO THE EDITOR

Smaller Waste Baskets?

Dear Sir:

I would like to see an article on waste control, which would include some ideas for office employees.

Clifford O. Weiger, Training Representative, Northwest Airlines Inc., Minneapolis, Minn.

● We are currently trying to line up a story on this subject and would be interested in hearing from any readers who have had experience in this area. —ED.

Get SM Degree

Dear Sir:

We plan to award subscriptions of SUPERVISORY MANAGEMENT to graduates of our in-plant supervisory management training course.

William E. Long, Training Specialist, Ryan Aeronautical Company, San Diego, Calif.

Help on Self-Help

Dear Sir:

The first issue of SUPERVISORY MANAGEMENT sets an excellent standard of quality for material content. It will meet a definite need for self-development in supervisory principles.

A. S. Hartanov, Plant Manager, Uarco, Inc., Oakland, Calif.

"Like to Work"

Dear Sir:

"Most People Like to Work" by Mr. Lynn E. Castle (December 1955, p. 47) read so well that we would like your permission to reproduce it and distribute it to our supervisory personnel.

Norman J. Ghisalpert, Asst. DSC/Personnel, Rome Air Development Center, Griffiss Air Force Base, Rome, N. Y.

No Crystal Ball Here

Dear Sir:

The reaction of the foremen in our organization to SUPERVISORY MANAGEMENT seems to be definitely positive. However, there was one comment made fairly frequently: "We'd like to see included in this new magazine at least a page or two on the current economic outlook."

Robert W. Schindler, Training Director, Globe-Union Inc., Milwaukee, Wis.

● Most of the supervisors we have contacted seem to feel that the economic coverage provided by newspapers, other periodicals, radio and TV is sufficient. They would rather have the space used for articles directly related to their work.—ED.

We are always interested in receiving comments, articles, or suggestions from readers. All material should be addressed to: Hubert Clay, Editor, SUPERVISORY MANAGEMENT, American Management Association, 1515 Broadway, Times Square, New York 36, N. Y.

AMA